U.S. DEPARTMENT OF COMMERCE
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Cattaraugus County, New York, Solid Waste Disposal System

Cattaraugus County Refuse Dept, Little Valley, N Y

Prepared for

Environmental Protection Agency, Washington, D C Office of Solid Waste Management Programs

1977

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CATTARAUGUS COUNTY REFUSE DEPARTMENT
LITTLE VALLEY, NEW YORK

PREPARED FOR
ENVIRONMENTAL PROTECTION AGENCY, WASHINGTON, D. C.

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This report summarizes the planning and implementation of a county wide solid waste system for Cattaraugus County. The system consists of two sanitary landfills and seven convenience stations. Use of convenience stations is limited to individuals hauling small amounts of refuse, which is loaded into refuse containers and transferred to one of the sanitary landfills for disposal.

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FOREWORD

In April 1973 the U.S. Environmental Protection Agency awarded a demonstration grant to Cattaraugus County, New York to demonstrate a rural solid waste disposal system consisting of two county operated sanitary landfills and a series of transfer stations. This publication reports on the planning, implementation, and operation of this project. At the time that this report was prepared, construction was not completed on all the transfer stations. However, several of the stations were in operation long enough to provide realistic costs for this system. This concept of providing several small transfer stations throughout a predominately rural county should be viewed by rural solid waste planners as a possible alternative to a "green box" or a "mail box" collection system.

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CATTARAUGUS COUNTY, NEW YORK
SOLID WASTE DISPOSAL SYSTEM

Barton Brown Clyde & Loguidice, P. C.

Introduction

Report Summary. Cattaraugus County in 1967 had the foresight to look into the problem of solid waste disposal before problems reached the level of severity. Through detailed study and planning and with monetary assistance from various arms of government, including a Demonstration Grant from the United States Environmental Protection Agency, a county-wide plan was developed and implemented.

Both program development and implementation were staged due to changes in existing technologies, economics, and availability of land for sanitary landfill sites.

When implementation is completed Cattaraugus County will operate two sanitary landfills and seven convenience stations. Use of the convenience stations is limited to individuals hauling small amounts of refuse, which is loaded into refuse containers and transferred to one of the sanitary landfills for disposal.

The impetus for this project was the desire to provide a clean and virtually litter free county while providing an efficient and economical method of disposing of solid waste in a safe, healthy and legal manner.

The purpose of this report is to present information on the program in order that it may be reviewed by others to assist them in making the decisions that Cattaraugus County has already faced.

Acknowledgments

The Cattaraugus County Solid Waste Disposal System Report was initiated by the Cattaraugus County Legislature and financially assisted through a Federal Grant from the U.S. Environmental Protection Agency.

We wish to acknowledge the cooperation of the following individuals whose assistance in the preparation of this report has been immeasurable. The staff of the Cattaraugus County Refuse Department, under the direction of William W. White, Administrator, and including Linda Shelton and Lucille Halsaver, for providing detailed information on the operation of the Department and its facilities. To Mr. Dolf Bonenberger, Cattaraugus County Director of Planning and former Administrator of the Refuse Agency and Mr. Chester Halgas, Cattaraugus County Environmental Health Engineer, for providing information on the history of the refuse program in Cattaraugus County prior to the inception of the Refuse Department.

Further, we acknowledge the participation of the consulting engineering firms of Hazen and Sawyer, New York, New York and Wendel Associates, Lockport, New York for their reports and designs compiled while serving the County during various phases of the Refuse Program. Much information contained in this report was derived as a result of the services performed by these firms.

The valued assistance of the above, without which this report could not have been compiled, is genuinely appreciated.

Cattaraugus Profile

General. Cattaraugus is one of the larger counties in New York State, extending over 1,300 square miles (3367 square kilometers) and includes 32 towns, 13 villages, 2 cities, 3 Indian Reservations, and a State Park. The County occupies a portion of southwestern New York State and borders to the south on the Commonwealth of Pennsylvania.

Despite a relatively small population and a terrain which has concentrated development in less than 3 percent of the available land, Cattaraugus County is remarkably diverse economically and culturally. The County contains some 1,200 farms (and is one of the State's top ten dairy counties), yet more than 40 percent of personal income is generated by manufacturing concerns. The heterogeneous population includes some 4,600 Seneca Indians (about 6 percent of the County's population), and a community of Amish farmers.

Climate. The County has a cold continental climate. Mean temperatures range from 24°F (-4.4°C) in January to 68°F (20°C) in July. The ground and lakes generally remain frozen between December and March. Natural stream temperatures range from 32°F (0°C) in winter to 80°F (26.7°C) in summer. Extremely heavy snows fall along the high ridges near Lake Erie. Average annual precipitation varies from 60 (152.4) to

105 (266.7) inches (centimeters) for the county as a whole. Snowfall exceeds 200 inches (508 centimeters) in some years in the traditional "snow belt" regions, including Little Valley, Ellicottville and West Valley; while the average annual snowfall in the entire county varies between 60 (152.4) to 105 (266.7) inches (centimeters). Seasonal variations in precipitation cause surface waterways to overrun their banks, usually in the spring months and then register no flow during the dry late summer months.

Topography. The topography of the county is varied. Most of the county lies on the Allegheny plateau, a rolling upland expanse cut by numerous steeply walled valleys. The most rugged topography and the highest elevations occupy the southern part of the county. Peaks there rise to more than 2,400 feet (731.5 meters) above sea level. More than 42 percent of the southern sector of the county is sloped at a 15 percent grade. In the western and northwestern part of the county, the terrain softens and rolls more gently into the Erie Lake Plain.

The major streams in the county have carved out wide valleys which contain good agricultural land; the flatter terrain has also encouraged urban development and transportation routes. These ancient bedrock valleys are filled with deep glacial deposits. Most streams, like the Allegheny River, have relatively mild slopes. The Cattaraugus Creek and its tributaries, however, descend steeply from the Allegheny plateau into deep gorges cut into the bedrock.

The divide between the Cattaraugus Creek and the Allegheny River drainage basins is the Mississippi-St. Lawrence continental divide. The line of the divide through the county is determined by the high points of glacial deposits in the north-south valleys.

Soils. A majority of the soils found in Cattaraugus County were derived from glacial till and outwash deposits consisting primarily of gray shales, sandstones, and siltstones dating from the Upper Devonian age. The outwash and alluvial deposits predominate in the valleys; glacial till predominates in the northern uplands, residual soils in the southern uplands.

Various drainage problems stem from two soil-related sources: a wide-spread occurence of "fragipans", highly compacted glacial clays found at a shallow depth in the subsoil; and, the impermeable nature of the subsurface shales which occur through the county.

The best soils are found in the broad, flat valleys and on the more gently sloping hillsides.

Transportation. About 2,100 miles (3,380 Kilometers) of municipally maintained highways serve Cattaraugus County. There are no interstate highway connections in the County, but rapid transportation is available on State Routes 17 and 16, and on U.S. 219. Route 17 runs east and west through the southern, more heavily populated, section of the County. To the east the highway connects Cattaraugus County to Corning, Elmira, Binghamton, and New York City. To the west, Route 17 connects

with Interstate 90 (The New York Thruway) some thirty miles from Erie, Pennsylvania. Route 17 traverses some of the most beautiful countryside in the State and provides quick and interesting access to the County for vacationers from the larger eastern cities. Route 219, which passes between the two largest population centers in the County (Olean and Salamanca), connects the County with Buffalo to the north and Pittsburgh, Pa. to the south. Route 16 runs generally parallel to U.S. 219; it connects Olean directly with the major metropolitan Buffalo area.

Most of the County's roads are maintained by individual towns and villages; only a third of the total mileage falls under County or State control.

Three railroad lines, maintaining 205 miles (330 Kilometers) of track, serve Cattaraugus County. Principal Connections include Buffalo to the north, Rochester to the northeast, Jamestown and Erie, Pennsylvania, to the west, New York City to the east, and Philadelphia, Harrisburg, and Washington, D.C. to the southeast.

There are twleve airports of various sizes in the county, including Olean Municipal. All twelve serve small, private airplanes. Commercial connections are available at Buffalo International, Bradford-McKean Airport, or Jamestown Airport.

Recreation. Cattaraugus County is rapidly becoming a year round recreational haven. The heavy snows spawned by Lake Erie promote excellent skiing; major ski centers are now located in Ellicottville and Allegany. Other ski resorts are cropping up in New Albion, in Red House on the Allegany State Park grounds, and in Machias.

Allegany State Park, besides providing skiing facilities for the winter sportsman, has many activities and points of interest for the summer vactioner. Campers can hike, swim, boat, even visit the first oil well drilled in New York without leaving the Park's grounds. And at Onoville, across the Allegheny Reservoir from the Park, visitors can use the launch facilities and moorings, the picnic area, and camp ground built in a joint effort by the County and the U.S. Army Corps of Engineers. The county also offers abundant game for the fisherman and hunter.

For a change of pace, the recreation facilities in the county also include the County Museum and the Old Indian Fort in Little Valley. There are almost a dozen golf courses spread throughout the county.

Projections by the New York State Conservation Department indicate that recreational opportunities and the number of resorts and vacation homes will increase dramatically over the next 25 years.

Land Use. More than 75 percent of Cattaraugus County's population live in widely scattered small towns and villages. The largest metropolitan area, Olean, holds 35,000 people; Salamanca and Gowanda, the next largest population centers, house 10,000 and 5,000 respectively. No other community has more than 3,000 people. Less than 3 percent of the County's land is developed for residential, commercial, industrial, or public use. More than half the county is woodland.

Though considerable areas in the county are undevelopable because of excessive slopes or poor drainage, Cattaraugus has enormous space available for future development. The county can expect much of this growth, and the attendant land use, to be more and more involved with recreational facilities and vacation or second homes.

Population and Economic Base. In 1970, the population of Cattaraugus County was recorded as 81,666 according to U.S. Census figures. Projections of future population growth by the New York State Office of Planning Services estimated that by 1980 the population will grow to about 82,563, and that the population in 1990 will stand at 83,226.

The economic base of Cattaraugus County is well diversified, divided among agriculture and forestry, manufacturing, recreation, and extractive industries (primarily oil). Among the leading manufactured products are furniture, cutlery, ceramic tile, glue, dairy, leather, and chemical products. The present trend,

however, is towards newer industries-electronics, plastics, metal working, chemicals, and machinery. These industries require fewer people in relation to their output, but they require more highly trained and skilled personnel.

The 1969 mean income for the 19,680 families in the County was $9,518. Per capita income averaged $2,603. Manufacturing accounted for 41 percent of personal income.

Projections predict a 50 percent increase in total jobs in the County between 1960 and 2020. During this period, agricultural jobs will decline, and manufacturing jobs will increase by about 20 percent. The largest increase will be in service industries and the wholesale-retail trade. This increase will reflect, among other factors, the developing importance of resorts, recreation areas, and vacation homes.

The county contains thirteen public school districts, six parochial elementary schools, and one parochial high school. Cattaraugus is one of the few counties in New York State without a branch of the State University. St. Bonaventure University is the only degree-granting institution in the County. The Board of Co-operative Education Services (BOCES) provides numerous services to the County including adult education, vocational and technical courses, programs for handicapped children, data processing, and specialized education programs.

History of Solid Waste

In February, 1967, the County Board of Supervisors created the Cattaraugus County Refuse Agency to develop a county-wide program of refuse management. Its initial purpose was to study the character and magnitude of the refuse disposal problem on an intermunicipal basis. During the summer of 1967, Allegany, Olean, Portville, and Hinsdale formed the Olean Regional Planning Council to consider in conjunction with the Agency, refuse disposal and collection problems in that area. Both groups attempted to push inter-municipal cooperation and were in agreement that it would be most economical to have one sanitary landfill to serve the southeast part of the County. By fall the council had surveyed twenty possible disposal sites and had rejected all but four. One site, in the Town of Olean, emerged from the four but the concept failed to gain total acceptance when the Town of Olean decided it didn't want the landfill on Town property, the City of Olean became concerned about deteriorating water quality, and Felmont Oil expressed concern that increased hardness of the groundwater in the area of the landfill might result. The objections became impossible to overcome and the landfill idea for this area was abandoned.

In the spring of 1968, the Refuse Agency submitted a funding application for a planning grant to the Department of Housing and Urban Development. The grant was approved that fall, and the firm of Hazen and Sawyer, Engineers, was awarded the contract to produce the county-wide refuse disposal study financially aided through the HUD grant under the Urban Planning Assistance Program. The report was financed in part by the State of New York. Meanwhile the County Health and Planning Departments collected data to compile a County-wide refuse disposal and collection inventory. The more notable findings of the report included the existence of over 80 land disposal sites in the County, the abundance of land at low cost making sanitary landfill the most economic and practical method of disposal and the inability of individual municipalities to cope economically and efficiently with collection and disposal of solid waste.

The Hazen and Sawyer report was released in December, 1969. The failure of this approach was probably attributable to the fact that towns and villages, were at the time, allowed to get by with substandard facilities and few, if any towns, were prepared to accept refuse from other towns. The problem of cost association could also be a contributing factor with Towns comparing the minimal cost to run their marginal landfills with the true cost to operate a proper sanitary landfill consistent with all existing rules and regulations. The report issued seven major recommendations:

1) Reconstitute the County Refuse Agency to administer, plan, and operate refuse collection and disposal facilities. Initially, the activities of the Agency should be directed towards the implementation of the adopted disposal program.

2) Create County Refuse Districts among interested municipalities as an interim step towards adoption of a County-wide collection and disposal system.

3) Conduct more detailed soils investigations of recommended disposal sites and negotiate for the acquisition of the most suitable sites based on projected land requirements.

4) Initiate sanitary landfill operations at newly acquired sites, and terminate all existing disposal sites in service areas.

5) Develop a plan for disposal of junked automobiles and bulky wastes possibly utilizing abandoned mining pits.

6) Request a Federal Demonstration Grant to study further the feasibility of utilizing portable containers in rural areas for refuse storage and transfer to sanitary landfills.

7) Engage the service of a consultant to develop a detailed plan for County-wide refuse collection in areas of high population density, including personnel assignments, equipment requirements and optimum collection routes.

After the release of the report, the Agency encouraged the creation of four refuse districts in the northwest, northcentral, northeast and southeast sections of the County. The Agency conducted numerous meetings throughout the County to explain the proposed system and to solicit the support or individual municipalities. Also studied in the interim report was the concept of county-wide refuse collection. The County Legislature in approving the four-district alternative requested further study of the landfill-transfer system only.

1970 marked a turning point in the history of the Agency. In May, the Hazen and Sawyer report was accepted by the County Legislature. The U.S. Soil Conservation Service aided the Agency in landfill site investigations throughout the County. In each of six major regions, between 3 and 12 sites were identified and rated on the basis of location, adjacent land use, access, surface soils, and probable working conditions.

During 1970 the N.Y. State Legislature enacted legislation permitting any county to undertake refuse disposal and collection as a county function rather than a district function. In September, the Agency began to discuss a County-wide program of refuse disposal as an alternative to numerous district arrangements. In light of the new State legislation, the Agency solicited support from municipalities for a complete County-wide refuse collection and disposal system.

In December, 1970, the Agency was reconstituted by the County Legislature and given new membership. The Legislature empowered the Agency to hire engineering assistance to prepare plans for the development of land disposal sites in the County along with an organizational plan for implementing the findings of the comprehensive refuse study. Both the County Planning Department and the Health Department were represented in the new Agency. By March the Planning and Health Departments had reported on potential landfill sites in the County, soil investigations were conducted by the Soil Conservation Service, and options were taken on various sites.

Early in 1971 the Agency began work on drawing a program of solid waste collection and disposal for the entire County. Wendel Associates was retained and along with the County Planning and Health Departments generally assisted the Agency in compiling data and preparing the Interim Report. In April Wendel Associates made its initial presentation to the Agency outlining the first detailed discussion of substituting transfer stations for some of the six proposed sanitary landfill facilities. The six service area arrangement had been proposed in an earlier study and would provide local accessibility to most of the County's population. The Agency continued study of a system consisting of two sanitary landfills and four transfer stations as opposed to a six sanitary landfill system. Their findings showed that

the latter option involved 35 percent more capital expense and 38 percent more annual operating expense. After reviewing their findings the Agency adopted the combination landfill-transfer system and on the basis of these and other findings prepared the Interim Report. The report suggested that landfills be placed in the southeastern and northcentral portions of the County, transfer stations were recommended for the Dayton-Markham area in the Northwest, the Randolph-East Randolph area in the Southwest, Route 219 north of Salamanca in the Southcentral region, and the Machias area in the Northeast. The Report was presented to the Legislature by the Agency in early June and the reaction of the governing body was in agreement with the landfill-transfer program. The Report also recommended that the Legislature secure, as soon as possible, some 98 acres (40 hectares) of land to serve the north central part of the County as a landfill. That site, known as Five Points, and located about 5 miles (8 kilometers) north of Little Valley was purchased on June 23, 1971 for $25,000.

Planning, budgeting, interviewing consultants to prepare engineering designs, and optioning transfer sites filled the year between the fall of 1971 and November, 1972. Early in 1972 Wendel Associates was asked to proceed with the development of a final report on the two landfill, four transfer station plan.

In February, March, and April of 1972 the Agency applied for three grants which, over a period of about a year, were all approved.

1) Environmental Protection Agency Demonstration Grant supplied $194,493.

2) Farmers Home Administration Grant for capital supplied $100,000 in grant aid and a $350,000 loan at 5 percent interest.

3) New York State Department of Environmental Conservation Grant provided 50 percent of engineering costs plus 25 percent to be applied to the transfer station construction. The latter funding came from monies available under the Environmental Bond Issue.

In June of 1972 the County set up an emergency landfill in order to handle the large volume of refuse resulting from floods which occurred in the County. The site was located on Struble Hollow Road in the Town of Olean. In excess of 900 tons (816.5 tonnes) of debris washed up by the flood were dumped in a day and a half including merchandise from area stores destroyed or contaminated and household articles. The site was open from 8 A.M. until dark and was operated by a private contractor and supervised by the Refuse Agency. It was estimated to cost $1000 a day to operate the facility.

The Agency secured two transfer station sites (in Dayton and in Machias) in November. Also in that month, the City of Olean was compelled to open a temporary landfill, located in the Town of Ischua, because no permanent landfill site had yet been designated in the Olean area.

By April, 1973, the Wendel Associates operational report was complete. It outlined each step the County Legislature and the Agency had to take over the next several months to ensure the proper development, design, administration of the County-wide disposal plan.

The report concluded that:

1) The operational program proposed agrees with the Comprehensive Refuse Collection and Disposal Plan and is the result of actions taken by the Cattaraugus County Legislature following their review of the Interim Report prepared in 1971 by the Refuse Agency.

2) The proposed operational plan seems to distribute charges fairly under the options provided by law, and intends to treat all persons, businesses, industries, institutions and others on a complete equal basis based on the amount of refuse disposed by the user.

3) All aid programs with funds committed to the "5-Points" Project are conditioned on a deadline for operation of September 1, 1973. The aggregate of funds thus conditioned is in excess of $300,000.

The report then recommended that:

1) The Cattaraugus County Legislature accept and approve the Operational Plan.

2) The Cattaraugus County Legislature authorize Final Plans and Specifications for the "5-Points" Landfill.

3) The Cattaraugus County Legislature approve continuance or re-constitution of the Cattaraugus Refuse Agency as the permanent administrative body for the Refuse Program.

4) The Cattaraugus County Legislature take the necessary steps to create the Cattaraugus County Refuse Local Law as recommended by the Cattaraugus County Refuse Agency.

5) The Cattaraugus County Legislature authorize the staffing of the Agency, following determination of duties and qualifications for each position to be filled, and provide the necessary office space.

6) The Cattaraugus County Legislature authorize the Refuse Agency to take all steps necessary to gain final approvals of Plans and Specifications and to take such actions as are then necessary to develop the facilities, to advertise for and take bids and to proceed with minimum delay to make the system operational in the "5-Points" Service Area.

7) The Cattaraugus County Legislature continue in its support of efforts by the Refuse Agency to obtain a satisfactory, long term Disposal Program for the Olean Service Area.

8) Until such time as a functioning program is possible for the "Olean" Service Area, any emergency conditions involving solid waste, where public health is in question, should be handled by the facilities of the "5-Points" Service Area.

In June a detailed report was prepared by the Agency and presented to the County Legislature outlining every step and action required on the part of both the Agency and the Legislature to implement the program. At this time public relations efforts were increased through the maintenance of a booth at the County Fair and news releases.

One month after the County Legislature received the report, the Ischua Landfill site was purchased to serve the Olean area. Also in the summer of 1973, the County Legislature added two more proposed transfer stations in Allegany and Portville to the transfer concept, transfer station sites were optioned in two locations, and the consultants presented operating plans for the Mansfield Sanitary Landfill. In August, Mr. William White was appointed Administrator of the Refuse Program.

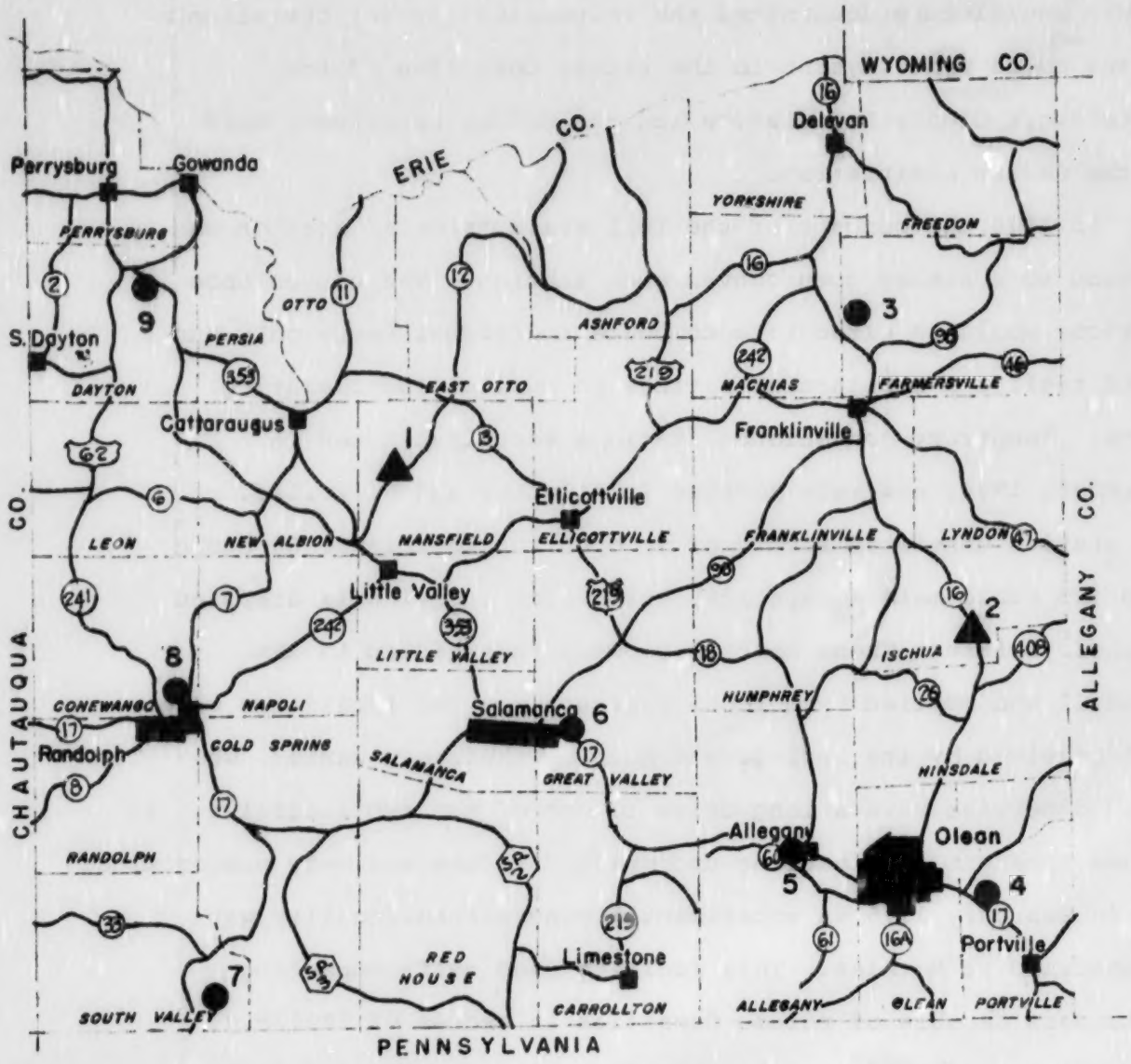
In the fall of 1973 the Legislature approved the execution of the option for the Machias transfer site and competitive bidding and purchase of equipment for both the sanitary landfills and the transfer stations commenced.

In early 1974, upon implementation of the system, the County Legislature designated the responsibility for operation of the solid waste system to the Refuse Committee of the Cattaraugus County Legislature and the Refuse Department head by the Refuse Administrator.

In 1974 the concept of the full scale transfer station was revised to a scaled down convenience station. The convenience stations would be sized to accomodate individual users only and would realize a substantial savings in capital and operating costs. Temporary convenience stations were instituted in November, 1974, and were located in Allegany and Portville. The station consisted simply of an open top container, 30 cubic yard (23 cubic meter) capacity, into which individuals disposed of their refuse. These containers were then hauled to the landfill and emptied by a local contractor. The facilities were well received by the individuals hauling their own wastes, who would otherwise have a long drive to one of the two landfills. It became apparent that hauling uncompacted refuse was very uneconomical and in February 1975 an experimental convenience facility was established in Machias. This facility used self-compacting containers capable of refuse densities in excess of 500#/c.y. (297 kilograms/cubic meter). The compaction attained decreased the number of loads by over one-half, representing a similar dollar savings in contract haul. The Machias station illustrates a successful experiment in using a closed steel box with a self-contained hydraulic compactor to double the payload.

FIGURE I

CATTARAUGUS COUNTY REFUSE SYSTEM - 1975



Legend:

1 - Five Points Sanitary Landfill
2 - Farwell Sanitary Landfill
3 - Machias Convenience Station
4 - Portville Convenience Station
5 - Allegany Convenience Station
6 - Salamanca Convenience Station
7 - Onoville Convenience Station
8 - Conewango Convenience Station
9 - Dayton Convenience Station

NORTH

In June, 1975 Cattaraugus County engaged the engineering services of Barton Brown Clyde and Loguidice, P. C. to complete the implementation of the transfer system. The Refuse Department and the engineers developed a system that would provide equitable distribution of service to the residents of the County. The system was centered around the model facility at Machias and the concept of self-packing containers. The Machias station would be retained, and stations constructed at Dayton, Randolph (Town of Conewango), Onoville, Allegany, Portville and Salamanca. The Onoville and Randolph facilities would be completely new, while the remaining four would be replacements for the temporary open top stations which are proving too expensive to operate. Very few of the County's population centers would have any further than a five mile drive to the closest facility.

The stations will be modeled after the concept instituted at Machias, using self-packing containers except for two stations which will use a combination of a single stationary compactor supplied through an earlier contract and one of the self-packing containers.

Containers would be hauled to the landfill by private haulers who would receive a County hauling contract through competitive bidding procedures.

Open top containers for oversize, bulky waste will also be available for use at these stations.

The facilities would operate according to the demand for service. In some of the lighter waste generation areas, Saturday plus one weekday would be sufficient. In other more populus areas, five or six day service may be necessary.

In July, 1975 the Cattaraugus County Legislature was notified of approval of an application for a grant of $225,160 from the Appalachian Regional Commission. The grant is for equipment and development of the on-going program of two sanitary landfill sites and six rural transfer stations.

In September the system was presented to the Legislature and received approval in November.

The system is anticipated to be operational by mid-1976.

Past Solid Waste Conditions And Practices

By 1971 the disposal of solid wastes in Cattaraugus County had become a critical problem. Disposal operations were generally unregulated; hundreds of disposal sites, including road side dumps, backyard burial and burning sites, and public and private landfills which did not comply with State regulations all contributed to unhealthy, unaesthetic, and illegal conditions. Municipalities could not efficiently and economically contend with the problems of refuse collection and disposal on their own, yet the county was without a centrally administered agency to plan and operate a county-wide system of solid waste management.

At the time, only 53 percent of the County's solid waste was collected at all; only 8.7 percent of the waste was properly disposed of in municipal landfills; another 3.9 percent was removed from the County by contracted collectors.

Though a limited amount of apartments and institutions incinerated refuse, essentially all the County's refuse was disposed of in landfills. Most of the disposal sites were owned and operated by Towns and Villages; some were privately maintained. The City of Olean transported its waste to a private landfill in Allegany County. The Peter Cooper Corporation operated a landfill for its own industrial wastes. Industrial refuse from the Clark Brothers (Dresser Industries) was collected and disposed

of privately. Generally, no charge was levied for dumping at municipal landfills and each municipality paid dumping costs from its general budget. The County Health Department supervised and controlled site operations to some extent.

Very few of the refuse disposal sites could be classified as sanitary landfills. Refuse was dumped at a site and occasionally burned or buried. The sites were frequently unattended; refuse was not properly covered. The sites were consequently infested by rodents and plagued by flying debris. Some salvaging occured at these sites, but the small quantities of salvageable material discouraged organized salvage operations.

The following table lists the municipalities, the presence of municipal disposal areas, and the degree to which each area complied with State regulations in existence at the time.

TABLE 1
STATUS OF MUNICIPAL DISPOSAL IN 1971

Municipality Town of	Had Municipal Disposal Area	Compliance Status
Perrysburg	Yes	Poor
Persia	Yes	Fair
Dayton	Yes	Fair
Leon	No	
Conewango	No	
Randolph	Used Private	Fair
South Valley	No	
New Albion	No	
Napoli	No	
Coldspring	Yes	Fair
Otto	Yes	Fair
East Otto	No	

Municipality	Had Municipal Disposal Area	Compliance Status
Town of		
Mansfield	Yes	Good
Little Valley	No	
Salamanca	No	
Red House	No	
Ashford	No	
Ellicottville	Yes	
Great Valley	Yes	Good
Carrollton	No	
Yorkshire	No	
Freedom	No	
Farmersville	No	
Machias	Yes	Fair
Franklinville	Joint with Village	
Lyndon	No	
Ischua	No	
Hinsdale	Yes	Good
Olean	Yes	Fair
Humphrey	No	
Allegany	Yes	Poor
Portville	Joint with Village	
Village of		
Perrysburg	Used Town	
Gowanda	Yes	Good
South Dayton	Used Private	Poor
Randolph	Used Private	Fair
E. Randolph	Used Private	
Cattaraugus	Yes	Fair
Little Valley	Yes	Fair
Ellicottville	No	
Limestone	No	
Delevan	No	
Franklinville	Yes	Poor
Allegany	No	
Portville	Yes	Good
Cities		
Olean	Used Private	Fair
Salamanca	Yes	Fair

Waste Quantities: Domestic. In 1968 the County Planning Board and the County Health Department undertook a joint survey to determine the quantity, type, and origin of residential waste. The survey indicated that the County generated some 730 tons (662 tonnes) of refuse weekly; about half the total came from Olean, Salamanca, and Gowanda, the three largest population centers. Per capita disposal was estimated at:

Rural population-----1.5 lbs./cap/day (0.68 kilograms/cap/day)

Urban population-----2.7 lbs./cap/day (1.22 kilograms/cap/day)

Waste Quantities: Industrial. Results of the joint survey indicated that most of the industrial solid waste produced in the County (± 1,300 tons/week) (1179 tonnes/week) is disposed of by industry on private landfills. The largest refuse contributors were the Peter Cooper Corp., a glue manufacturer with an average weekly waste generation of 450 tons (408 tonnes), and Clark Brothers (Dresser Industries) which generated some 476 tons (432 tonnes) per week of mold sand. Municipal and private haulers collected about 505 tons (458 tonnes) per week, almost half that amount in the Olean area.

Waste Quantities: Projections. The 1969 Hazen and Sawyer report included Table 2 as contained in this report projecting the population and waste generation growth patterns over a fifty year period.

Waste Quantities: Recent. With the commencement of operation of the two sanitary landfill sites a method for recording waste quantities was instituted. An updated graph showing the monthly quantities of refuse for each facility is included in the Appendix. Monthly quantities have been on an increase since the opening of each facility with some minor seasonal variations.

In 1975 it was determined that 10,100 tons (9160 tonnes) of waste were disposed of at the Five Points Sanitary Landfill and 22,720 tons (20,610 tonnes) at the Farwell Sanitary Landfill.

The calculated individual waste generation based on the waste received is just over 2 pounds (.907 kilograms) per capita per day.

TABLE 2
POPULATION AND REFUSE GENERATION

FROM: REPORT ON REFUSE COLLECTION AND DISPOSAL, CATTARAUGUS COUNTY, N.Y. by HAZEN and SAWYER, ENGINEERS

NAME	POPULATION				REFUSE-TONS/WEEK			
	1968	1980	1990	2020	1968	1980	1990	2020
TOWN HUMPHEREY	490	575	660	800	2.6	3.4	4.4	6.4
TOWN ISCHUA	550	580	600	670	2.9	3.5	4.0	5.4
TOWN LEON	930	1040	1140	1320	4.9	6.2	7.6	10.6
TOWN LITTLE VALLEY	580	665	780	940	4.7	6.6	8.9	12.9
VILL LITTLE VALLEY	1250	1325	1400	1500	21.8	24.4	27.2	32.0
TOWN LYNDON	400	420	440	480	2.1	2.5	2.9	3.9
TOWN MACHIAS	1450	1525	1590	1750	12.6	15.2	17.4	23.1
TOWN MANSFILD	620	655	680	750	3.3	3.9	4.5	6.0
TOWN NAPOLI	750	825	900	1030	4.4	5.5	6.7	9.4
TOWN NEW ALBION	750	780	800	900	4.4	5.3	6.1	8.2
VILL CATTARAUGUS	1350	1450	1550	1700	19.8	22.7	25.9	32.4
TOWN OTTO	750	795	840	900	5.3	6.4	7.4	9.8
TOWN OLEAN	3000	4100	5350	7800	26.2	40.2	56.8	99.6
TOWN PERRYSBURG	1600	1800	2000	2310	12.9	16.5	20.1	28.0
VILL PERRYSBURG	550	700	860	1600	5.2	7.6	10.2	23.0
TOWN PERSIA	500	565	630	700	3.5	4.5	5.5	7.5
VILL GOWANDA	3560	3720	3900	4300	60.6	67.4	73.4	88.7
TOWN PORTVILLE	2100	2350	2600	3350	18.6	24.8	30.9	48.1
VILL PORTVILLE	1600	1950	2300	2500	15.1	21.2	27.4	35.9
TOWN RANDOLPH	750	815	880	960	4.8	5.9	7.0	9.3
VILL RANDOLPH	1500	1600	1700	1850	19.2	22.4	25.7	32.5
VILL EAST RANDOLPH	600	650	700	800	5.7	7.1	8.3	11.5
TOWN RED HOUSE	240	250	260	290	1.3	1.5	1.7	2.3
TOWN SALAMANCA	850	870	890	1240	7.2	8.6	9.9	16.6
TOWN ALLEGANY	5450	6900	8500	11200	45.8	66.5	90.1	144.3
VILL ALLEGANY	2050	2230	2400	2700	19.4	24.2	28.6	38.7
TOWN ASHFORD	1650	1860	2050	2340	11.6	15.0	18.3	25.2
TOWN CARROLLTON	1100	1340	1580	2060	8.5	11.5	14.7	22.9
VILL LIMESTONE	530	660	800	1000	5.0	7.2	9.5	14.4
TOWN COLD SPRING	550	575	600	670	3.2	3.8	4.4	5.9
TOWN CONEWANGO	1140	1400	1670	2110	6.0	8.3	11.1	17.0
TOWN DAYTON	1350	1500	1640	1850	7.1	8.9	10.9	14.9
VILL SOUTH DAYTON	760	830	900	1010	41.7	43.5	45.2	49.0
TOWN EAST OTTO	680	750	785	820	3.6	4.5	5.2	6.6
TOWN ELLICOTTVILLE	900	1000	1100	1240	6.2	8.2	10.2	14.4
VILL ELLICOTTVILLE	1220	1370	1500	1700	23.5	26.9	29.8	36.4
CITY OLEAN	21200	22400	23300	25600	300.3	353.0	400.3	528.4
CITY SALAMANCA	8500	8950	9400	10300	90.3	107.1	121.9	157.8
TOWN FARMERSVILLE	710	745	780	860	3.7	4.4	5.2	6.9
TOWN FRANKLINVILLE	950	1000	1040	1150	7.1	8.5	9.8	13.0
VILL FRANKLINVILLE	2150	2250	2350	2600	28.3	32.4	37.0	46.3
TOWN FREEDOM	1100	1160	1210	1330	5.8	6.9	8.0	10.7
TOWN GREAT VALLEY	1450	1525	1590	1750	12.1	14.7	16.9	22.6
TOWN HINSDALE	2000	2690	3430	4880	16.4	25.2	35.4	60.7
TOWN SOUTH VALLEY	200	210	220	240	1.0	1.2	1.5	1.9
TOWN YORKSHIRE	1550	2020	2500	3400	10.3	15.0	20.2	33.2
VILL DELEVAN	1050	1450	1890	2850	9.9	15.7	22.5	40.9
	84960		104685		935		1356	
		94820		124100		1145		1875

Implementation

Five Points Sanitary Landfill. The Five Points Landfill, which comprises some 98 acres (40 hectares) is located on Toad Hollow Road in the Town of Mansfield. Some 19 acres (7.7 hectares) extend north of Krager Road and will be the last employed; another twenty acres are primarily swale area which will require special preparation prior to landfill use.

The Five Points Sanitary Landfill is expected during its development to serve 19 towns, 8 villages, and one city in the western half of the County with a combined population (1970 census) of 33,403.

The primary function of the sanitary landfill, during its years of operation, is to provide efficient and economical disposal of refuse. But the long-term use of the entire site and the interim use of those inoperative portions must also be considered. Indeed, the first design considerations must include the end use of the site. For interim use, areas not in immediate use were committed to hay production. Plans suggested that part of the hay crop would suffice for mulching the open-cut and completed sections of the landfill; the remainder will be a salable crop. Besides enhancing the economic status of the landfill, the hay production will neither adversely affect the stability of the soil nor interfere with the primary use of the fill.

End use plans call for the development of a wilderness park and campground. The interior access roads will be hard surfaced to permit all-weather use. The planting and screening will encourage wildlife. No environmental damage is anticipated because of the landfill.

Preliminary plans anticipate a complete refuse disposal facility for the Five Points Landfill. Beyond the disposal of ordinary domestic, commercial, and industrial refuse, the landfill can accommodate construction and demolition debris, junked automobiles, bulky white articles (these items, generally household appliances, can be kept in a short-term site for recycling). The plans also recognize the need for a clean, all-weather depository with good traffic control for private vehicles in light of the small scale of public refuse collection in the Five Points service area.

The plan includes the construction of an earthern berm along the exposed Toad Hollow Road frontage to screen the operation from the road. The berm rises to a height of 15 feet (4.6 meters), the fill material obtained from the excavation of areas to be used for junked autos, construction debris, and access roads. The Soil Conservation Service was consulted and upon analysis of the site recommended that the berm, which will become the starting face of the landfill operation, be seeded upon construction and planted with trees and shrubs to prevent erosion.

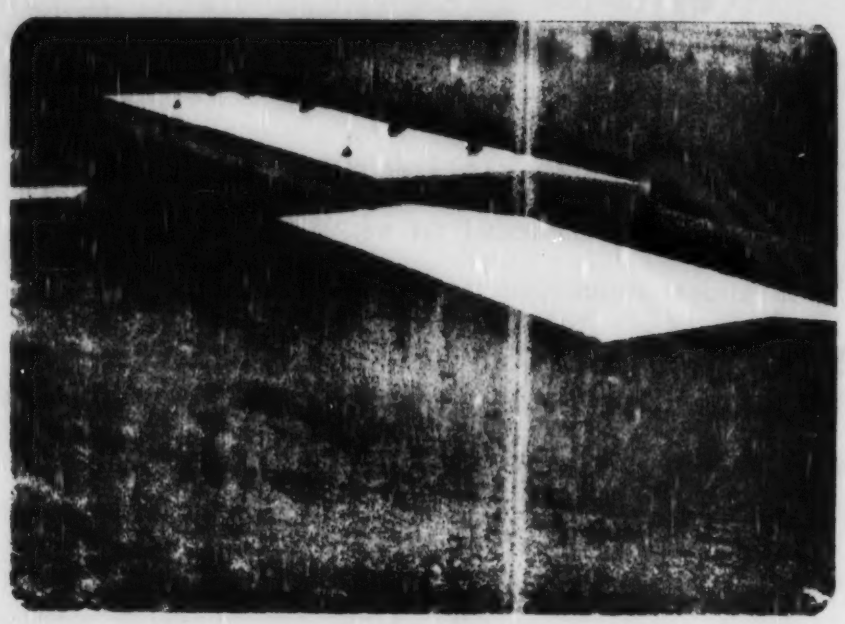


Figure 2. Five Points Convenience Station - Two open container stall private vehicle depository on right and maintenance building on left.

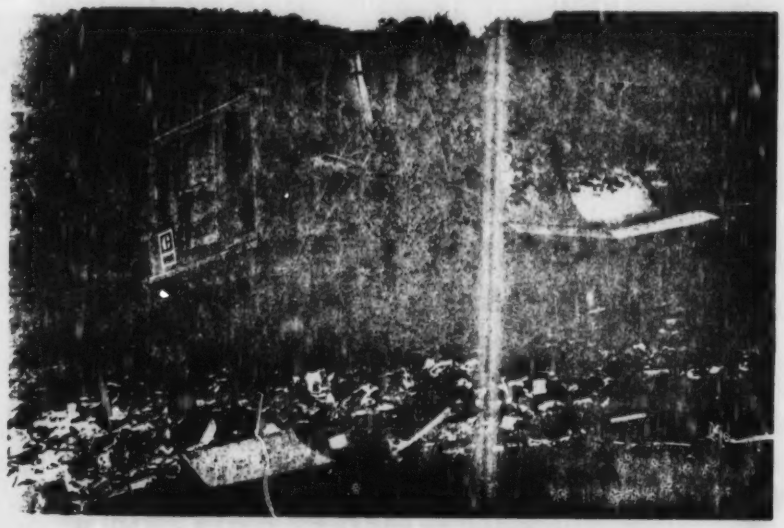


Figure 3. Dozer compacting wastes at the Five Points Sanitary Landfill. Earth berm to screen operation in background.

During the preparation of the site for opening, gas vents and monitoring wells were constructed to serve the area of immediate use. Continued improvements include placement of a slag wearing surface on the access road as the original gravel surface failed to perform adequately under wet weather conditions. Additional items requiring attention soon after opening in March, 1974 included fencing, grading the road, installing guide posts along the road and placing traffic signs in preparation to open the facility.

After disturbing the surface in some areas it was necessary to grade and seed the disturbed areas. With the guidance of the Soil Conservation Service, the Refuse Department planted 2,000 red pine, twenty-four lombardy poplar and eight flowering crab apple trees at the eight landfill and the transfer station sites. Additionally, the Refuse Department received one hundred clones of a hybrid aspen from the J. P. Lewis Paper Company, of Beaver Falls, New York. The trees are part of an experiment to develop a better and more economic source of pulp fiber and can be expected to reach a height of fifteen feet (4.6 meters) in only 3 years.

To accommodate heavy public traffic, the preliminary plan included a paved access road, a waiting line to protect cars from highway traffic and entering refuse transfer trucks, and a separate exit to Toad Hollow Road. Fencing would restrict access to the landfill site, but it could permit 24-hour, 7-day access to the public depository area.

The landfill site was divided into five areas:

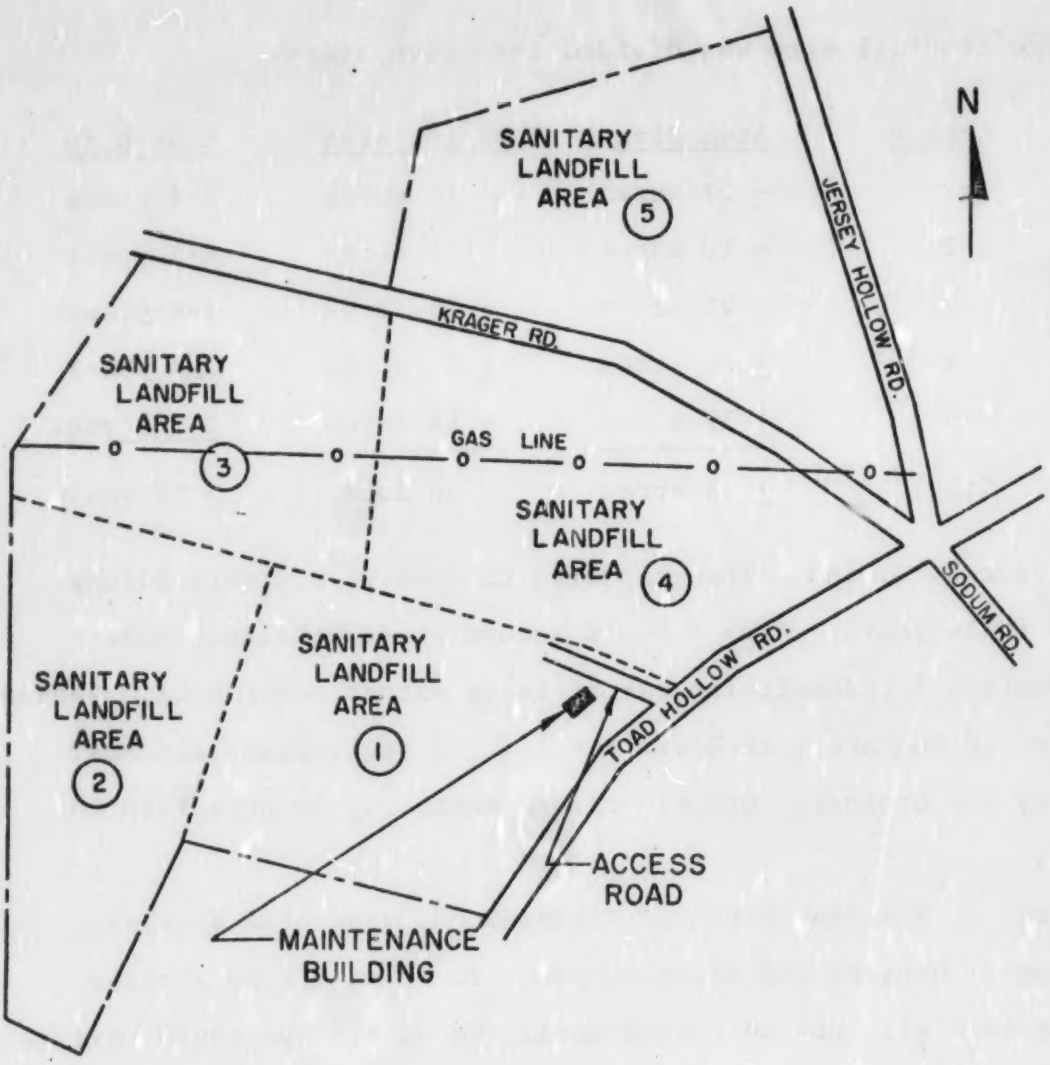
Area #	Area Size	Useful Area	Area Life
1	± 21 acres	± 17 acres	3-4 years
2	± 18 acres	± 15 acres	4-5 years
3	± 21 acres	± 17 acres	4-5 years
4	± 20 acres	± 17 acres	3-4 years
5	± 19 acres	± 14 acres	2-1/2 yrs.
Total	± 98 acres	± 80 acres	± 18 yrs.

Areas 1, 2, and 3 were expected to receive ordinary refuse for 11 to 14 years. Area 4 would accept inert materials like construction and demolition materials or excess cover soil. Because of water in the area, at least one lift of inert materials must underlay any ordinary, organic refuse which may be deposited in Area 4.

Area 5, standing north of Krager Road, presented special problems of control and truck access. To be most economically used, Area 5 will not be opened until the other four areas have been completed.

To best utilize available space and to comply fully with State regulations concerning landfill procedures, the preliminary plans provided for beneficial use of the landfill site. Areas 1 and 4 would be operated under the area method; in other sectors the initial lifts would operate under the trench method and later be converted to the area method. Compacted refuse would be

FIGURE 4



FIVE POINTS SANITARY LANDFILL
TOWN OF MANSFIELD
CATTARAUGUS COUNTY, NEW YORK

covered with 6 inches (15 cm) of cover. A completed area would receive at least 24 inches (61 cm) of soil cover.

The formulation of the preliminary plans and preparation of the landfill site to accommodate those plans were predicated on careful analyses of the surface water conditions, geological and ground water conditions, obstructions and cover material.

Before development, surface drainage presented some difficulties. In cooperation with the County Refuse Agency, the Soil Conservation Service of the United States Department of Agriculture prepared a soil drainage plan for the site. Surface drainage on site travels from west to east with a sloping from north and south to the center of the main parcel. A culvert, existing in Area 4, to which the drainage flows, carries water across Toad Hollow Road and away from the site. The area north of Krager Road drains via an existing culvert onto the site. The plan employed diversion ditches to intercept the flow of surface water at the westerly boundary and direct it north to an open, permanent waterway. The intercepted drainage would create a pond which would serve as part of the wildlife park projected as the end use of the site. The plan proposed additional diversion ditches to collect and direct the natural drainage to closed drains in the swale area where open streams would be covered over.

The Soil Conservation Service and the New York Department of Transportation conducted geological and ground water location analyses. The initial study consisted of open pit analyses of 15 pits dug to depths of 12 (3.6) to 13 (4) feet (meters). In the second study cased 3-inch (7.6 cm) holes were bored to rock or to a depth of about 50 feet (15 meters). Twelve holes were completed.

The nearest well to the landfill is approximately 2500 feet (760 meters) the closest buildings are 400 feet (122 meters) and upstream from the ground waterflow. The surrounding lands are farm lands or undeveloped forest and brush areas.

Besides accounting for surface drainage and the restrictions imposed by ground water and geological conditions, the plan had to accommodate man-made obstructions. A gas transmission main ran east and west through Areas 3 and 4. Rather than incur the expense of moving the gas main, designs parallel the main with part of the access road; this solution caused minimum difficulty to the landfill operation and left the gas main undisturbed.

Overhead power lines also existed on the site. Though the lines themselves would not hinder the normal operation of the site, it was advantageous to change the position of some power poles as part of the initial preparation of the site.

A major purpose of the geological and groundwater studies is the identification of areas where 5 feet (1.5 meters) or more of cover material exist. In such areas, ground water or rock should not be encountered for at least another five feet (1.5 meters) of excavation. That depth, based on the soils analyses, would minimize the probability of leachate reaching and contacting ground water or rock.

Ground water at a depth of 8 feet (2.4 meters) underlaid much of Area 1. Deep drainage plans were developed to permit access to more than two or three feet of cover material in Area 1.

Because of the dust produced by the predominant soils at Five Points, plans suggested only minimal stockpiling of cover material.

Utilities available to the site include electricity, natural gas and telephone. Sewers or water are unavailable and will have to be provided on site.

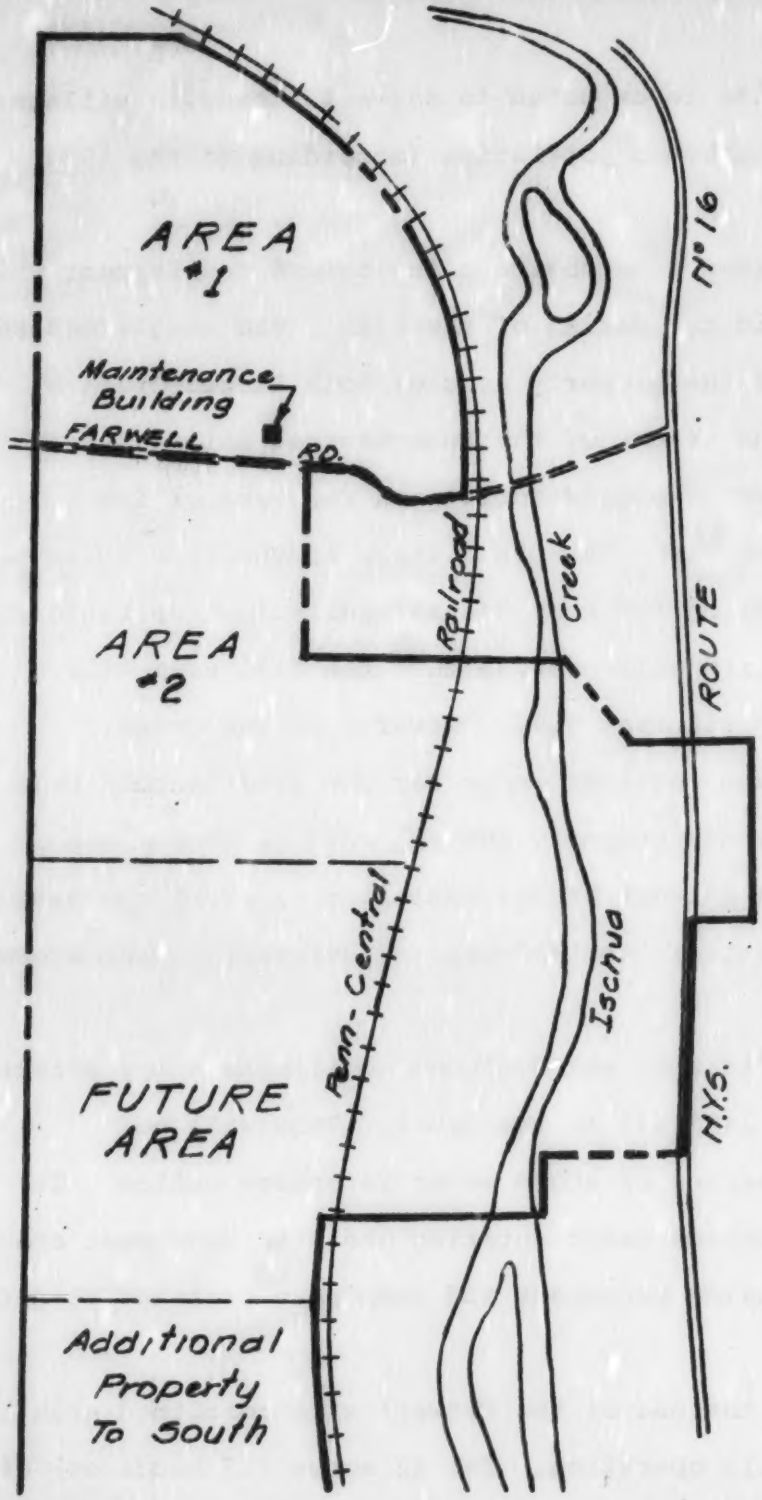
Entrance to the site is from Toad Hollow Road. Upon entering vehicles are weighed and records maintained. A Toledo 8130 Digital Readout Print-Way 500 scale is used with an electronic recorder. The weighing operation is overseen from the office of the maintenance building. The building is a five-bay facility of steel construction and is located just off Toad Hollow Road. Attached to the building, with separate entrance from Toad Hollow Road, is the individual disposal area. It consists of an open top container and a self-unloading forage box into which individuals dispose of their refuse. The open top, when full,

is hauled to the working face of the landfill and emptied by a private contractor with a tilt frame vehicle. The forage box can be hauled to the working face by the tractor and unloaded.

Equipment in use on the site includes a Caterpillar D-7 with winch and landfill blade. The D-7 was used to spread, and compact refuse and cover material. In 1975 the Refuse Department purchased a 12 cubic yard (9.2 cu. meter) capacity towed scraper to make the job of hauling and spreading cover material more efficient. The scraper is towed by the D-7. When not towing the scraper, the D-7 still compacts refuse. The Caterpillar 941 crawler loader with ripper provides a backup machine for the D-7 as well as providing the primary function of ripping difficult cover material and at times excavating and loading cover material into the six-wheel dump truck. The site also has a Ford farm tractor with a hydraulic front bucket which is used for snow removal and towing the forage box.

Farwell Sanitary Landfill. The County Sanitary Landfill No. 2 is located on Farwell Road in the Town of Ischua. The property is located to the west of New York State Route #16 about 10 miles (16 kilometers) north of Olean and the property includes approximately 227 acres (92 hectares), 20 (8) of which were designed for initial landfilling.

FIGURE 5



FARWELL SANITARY LANDFILL
(COUNTY LANDFILL Nº 2)
TOWN OF ISCHUA
CATTARAUGUS COUNTY, NEW YORK

The Farwell site is expected to serve 13 towns, 5 villages, and 1 city with a combined population (according to the 1970 census) of 47,263.

The site provided some obstructions toward development which were addressed to in the design of the site. The single access road to the bulk of the property crosses both Ischua Creek by a one-way bridge and tracks of the Penn-Central Railroad. Ischua Creek is a water supply source and for part of its length, a fishing stream. The creek flows southerly and is situated to the east of the Penn-Central Railroad. Operational design of the facility will provide that the fill area will come no closer than 350 feet (106.7 meters) to the Creek.

Existing surface water drainage for the site travels from west to east across the property and via road ditches along Farwell Road. This pattern drains into ditches along the westerly side of the Penn Central right-of-way and eventually discharges into Ischua Creek.

Drainage modification was designed to eliminate any direct discharge from the landfill to the Creek. This will be accomplished by a series of storm water retention basins. It will also divert surface water entering the site from west around the fill area employing permanent and temporary drainage structures to the basins.

Interim plans for use of the Farwell site committed Area 1 to immediate landfill operation. The 42 acres (17 hectares) of

Area 2 were designated for stockpiling cover material and storing sand and gravel. Temporary storage of recycled junked automobiles and appliances was also planned for Area 2.

Most of the remainder of the property is forest or brush area providing natural wildlife cover and protection; it will not be altered for at least 20 years.

The preliminary plans proposed a large excavation along the eastern edge of Area 1. This three-acre area was expected to accommodate two or three lifts initially; it could receive two additional lifts before the area was exhausted. The cover material, stored in Area 2, was to be obtained from the higher ground to the west in order to continually prepare new areas with a minimum of special excavation and stockpiling.

The preliminary plan estimates that the three acre, (1.2 hectare), three-lift operation will consume a year and a half. Adding two additional lifts will take another year. This plan, creating five lifts over 20 acres (8 hectares), will yield a site life for Area 1 of 17 or 18 years.

Although most of the refuse entering the Farwell Landfill will be collected and hauled by private or public agencies, private individuals will also bring refuse directly to the site. For the convenience of individuals a separate disposal area will be constructed near the entrance to the site. Individuals dispose of their refuse into an open top container or a forage box without having to go near the working face of the landfill.

Plantings to provide screening along both sides of Farwell Road were planned, as well as peripheral plantings along the northern and western boundaries. Original plans did not include plantings along the eastern boundary until a determination could be made to assure adequate sight distance of oncoming trains exists along the Penn-Central Railway track. Entrance and exit roads to and from the public depository were to be paved, as was Farwell Road, at least to a point immediately beyond where regular heavy trucking would occur.

Equipment in use on the site is identical to that purchased for the Five Points site. This duplication procedure minimizes parts inventory costs and permits familiarity with the machine on the part of the operator as well as the mechanic.

Construction on the site included a 45 foot (14 meter) by 50 foot (15 meter) maintenance building constructed in 1976 to house all equipment kept at the site. The facility includes office space and a shower-locker room as well as a shop work area. Independent heating zones economize on fuel consumption by allowing temperatures in the office and locker-shower to be maintained at 68°F (20°C) while the shop area can be kept at a lower temperature.

Utilities available to the site include electric power and telephone. Neither sewers nor water is available and would be supplied at the site. An on-site well and septic system were installed in 1976 during construction of the building.

Additionally inground fuel tanks service the equipment and provide fuel to operate the furnace.

A convenience area is maintained for individual users and is constructed of timber with a grade separation and sheltered area for individuals unloading. Serving the area is an open top container and a self-unloading forage box.

The development of preliminary plans and the preparation of the landfill site to accommodate those plans were based on studies of surface water conditions, geological and ground water conditions, obstructions, and cover material.

The Soil Conservation Service (SCS) and the Anderson Drilling Company made geological, ground water, and rock studies on the Farwell site. The SCS study consisted of a series of 16 open cuts of 8 (2.44) to 13 (3.96) feet (meters) in depth. The Anderson study consisted of 10 borings and samplings to depths of about 50 feet (15 meters). Rock, in the form of soft shale with thin clay seams, was encountered in only one hole at a depth of 33.5 feet (10.2 meters) below grade. Water was encountered in four holes, each of which was established as a preliminary water observation well. Only the fourth hole, taken in

Area 2 near Ischua Creek, seemed a true indicator of the ground water level. No excavation, however, was proposed to be closer than 10 feet (3 meters) above the highest recorded water level in any of the observation wells.

The lands of the site and of surrounding property consist of farm land, open fields, brush, and undeveloped forest area. The site is hidden from the public view except for the house and barns on land the Farwell family retained. Screening was proposed and alterations made to the existing landscape with the caution that good visibility must be ensured for travel in and out of the site.

The Farwell family buildings are at least 200 feet (60 meters) from the nearest proposed refuse deposit. Other buildings in the area stand on Farwell Road about 500 feet (150 meters) west of the landfill. Others are located 1500 feet (457 meters) distant on Route 16.

By January 1974 a water monitoring program in accordance with recommendations of the New York State Department of Environmental Conservation was commenced in order to obtain background data prior to site operation to determine initial conditions as a comparison for future tests.

Natural and man-made obstructions posed the greatest challenges to the landfill design. Because Ischua Creek is a water supply source and a fishing stream, plans had to ensure

that the water quality would be protected. The primary design concern, however, was the single lane bridge which severely hindered access to the landfill site.

Farwell Road, passing completely through the site, served as a boundary between Areas 1 and 2. Because the road would continue to serve property beyond the landfill, it had to remain open to the public, creating a security and control problem. Furthermore, the road grades along Farwell Road within the bounds of the landfill site were excessive. Plans recommended that the grades be flattened so the resulting grade will approximate 7 percent.

The geological tests conducted on Areas 1 and 2 indicated that the depth of cover material was generally limited by the practical limits of excavation and the capacity to stockpile the material. Excavation depths, therefore, were restricted to a maximum of 25 feet, (7.6 meters). Plans recommended that Area 2 be employed as a stockpiling area. Estimates project sufficient cover material to permit five lifts over an area exceeding 20 acres (8 hectares).

The future use of the site would most likely return the land to farming or upon completion of plantings, return the site to nature and preserve the site to permit regular use by the public as a recreational area.

Transfer Site. A well-integrated system of sanitary landfills and transfer stations proved to be an economical alternative to a system consisting of numerous landfills. Refuse mechanically compacted at a transfer station will yield a greater in-place density than non-compacted refuse when compacted during final disposal at the landfill and thus extend the life of the landfill site. Second, the judicious placement of transfer stations reduces time and expense to haul waste to the landfill. The transfer station, then, saves money by reducing haul time, fuel, maintenance and personnel expenses, and equipment expenses at the landfill. And third, the transfer station is adaptable to future recycling efforts by which paper, ferrous and non-ferrous metals, glass or fuel may be reclaimed from discarded materials.

In Cattaraugus County, the transfer station provides the most economical means of providing convenient disposal points for both urban and rural areas of so large a county.

The intent of the transfer station is to reduce the haul distance for users of the facility. The design of the facility must reflect the traffic it will receive; grades should be gradual and slight; ample maneuvering space must be provided for vehicles; transfer vehicles should have a separate switching area so they do not interfere with in-coming traffic.

Transfer stations typically provide two level operation--an operating floor (which includes the refuse depository, Control room, and offices) on the upper level, the compactor and maintenance area below.

Convenience stations are a scaled down transfer station providing service to individuals at less cost to the County than a full sized transfer station. The principle of transfer remains the same irregardless of which type of station is used.

In November, 1974 the Refuse Department instituted temporary "Convenience Stations" in the Towns of Allegany and Portville and in 1975 extended this service to the Towns of Dayton and Machias, and the City of Salamanca. The Convenience Stations are provided as a convenience to individuals who, hauling their own waste, would otherwise have a long drive to one of the two landfills. These stations are not intended to serve large generators of solid waste, or collectors. The original intent was not to handle large bulky objects, such as freezers and couches, but the inclusion of an open top container at each facility provides the added service.

The original convenience stations consist of open top steel boxes which are pulled onto trucks and taken to the landfill when full. Because the waste is loose and non-compacted very little actual tonnage is handled in each trip to the landfill. The cost per ton during the operation with the open top containers was prohibitive.

The Machias station was used to illustrate a closed steel box with a self-contained hydraulic compactor. The demonstration proved successful as the payload was doubled and the number of trips to the landfill thus decreased by one half. The concept of compaction at the Machias station is being used as the model for five of the seven convenience stations to be located around Cattaraugus County.

A contract, executed in 1973, as part of the original transfer program, will provide for the purchase of equipment for the other two convenience stations, along with four ejection containers, and eight open top containers. These stations will use the independent stationary compactor loading the ejection container.

In order to provide an equitable distribution of services to the residents of the County, the Machias station was retained, and new facilities are under construction at Dayton, Randolph (Town of Conewango), Onoville, Allegany, Portville and Salamanca. The Onoville and Randolph facilities will be completely new, while the remaining four are replacements for the temporary open top stations which proved too expensive to operate. The seven convenience stations, plus the two existing landfills bring most of the County's population centers to within a five mile drive of the closest disposal facility.

Figure 6. Machias self-contained hydraulic compactor convenience station.

Figure 7. Machias convenience station.

The convenience stations are modeled after the facility which operated at Machias, using self-packing containers. Two stations will each use one of the two stationary compactors supplied under an earlier contract. The refuse from Randolph (Town of Conewango) and Dayton facilities, plus Onoville, will be taken to the Five Points Sanitary Landfill for disposal.

The present method of haul is to have containers transported to the landfill by private haulers, who would be awarded a County hauling contract by means of competitive bidding procedures. Should this method prove too costly the County would have the option of purchasing and operating its own vehicle to haul waste to the landfills.

The facilities operate in each location according to the demand for service. In some of the lighter waste generation areas, Saturday plus one weekday is sufficient. In other more populous areas, five or six day service is necessary. Again the County has the latitude to revise the hours to meet the requirements of the facility.

Completion of the system is anticipated for mid 1976. Most of the earth work for the sites will be done by the County or Town Highway Departments or the Refuse Department thereby making it unnecessary to bid the work out to contractors. This would be a factor in saving money in the overall program as well as bringing about a more timely opening. It is expected that County personnel can be used to perform $70,000 work of the projected cost.

Figure 8. Retaining wall and container pad under construction at the Onoville convenience station.

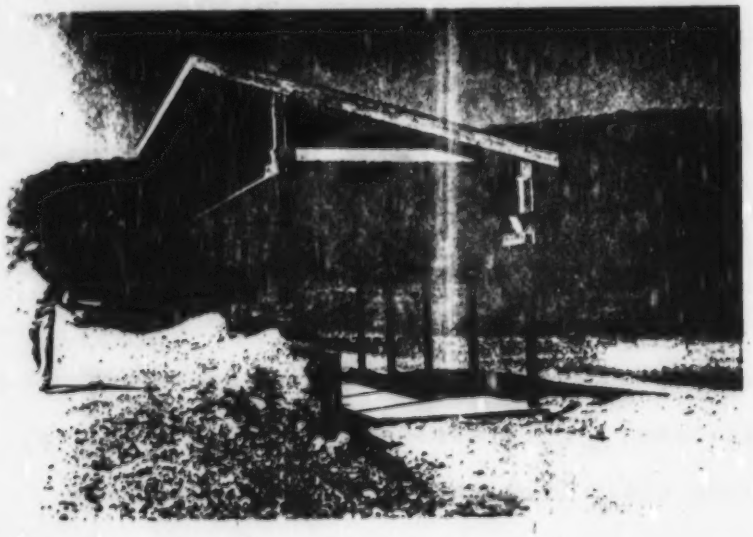


Figure 9. Private vehicle depository under construction at the Farwell Sanitary Landfill.

Administration and Financing. The program of solid waste disposal in Cattaraugus County is a function of County government with individual departmental status. The head of the department is its administrator, William W. White. The administrative staff includes one aid and two secretaries. Personnel at each landfill include a landfill supervisor, four equipment operators and a laborer. The workforce is supplemented with part-time labor to operate the transfer stations and periodic temporary labor to perform work associated with special projects.

Financing of the capital expense includes grants from the Environmental Protection Agency and the New York State Department of Environmental Conservation as well as a grant and loan from the Farmers Home Administration. These were provided to supplement the capital bonding approved by the Cattaraugus County Legislature.

A method of financing of the annual operational expenses and debt service has been a matter of much study, review and discussion. Methods for financing the program reviewed to date include:

1. Revenues would come from the County ad valorem tax which is based on the assessed value of property. Proponents claim that this method is the least expensive and easiest to collect and administer

and would provide revenues for solid waste by the same manner all other county services receive revenue. Non-supporters claim that this method of obtaining revenues is unfair since the amount of refuse generated has little to do with property values and tax-exempt institutions would not be charged.

2. The County would enter into a Contract with each municipality with contract payment amounts based on population, weight of refuse from the municipality or some other equitable means. The individual municipality would then in turn have to raise the necessary revenues which most easily would come from taxation based on assessed value of property.
3. Establish rate schedule based on service units to treat domestic, commercial, industrial, private haulers, institutions and state and federal agencies equally. Each service unit would be billed annually. The major drawback of such a system would be the prohibitively high cost to bill and collect revenues for the system. The legality of this method was questioned and it is no longer considered an option.

4. Similar to #3 would be a method of whereby "generating units" would be counted in each municipality annually and the refuse budget would be apportioned among the municipalities based on the percentage of solid waste generating units in each municipality. The municipality's share would then be payable to the County with the municipality using whatever means it chose to raise the revenue. Such a method would require the County to perform a count of generating units annually and would distribute the cost to the municipality by a method based on refuse generation rather than ad valorem tax.

5. Pay-at-the-Gate where each user is charged for garbage disposed of at the refuse facility. This method provides the most equitable manner to obtain revenues as it is based directly on garbage disposed. It is costly to operate since an individual responsible for collecting money and accounting is necessary at each facility. It is also a speculative method based on the anticipated disposal of refuse to determine a unit charge. Should the number of units fall short of that anticipated for the year a deficit would occur.

The County Legislature has concurred to obtain revenue from the County ad valorem tax on a temporary basis. No decision has yet been reached on a permanent method to obtain revenues to offset the cost of the refuse system.

The capital cost for development of the program totals $1,143,910.85 and is detailed in the appendices along with the 1975 annual operating expense for the Refuse Department which totaled $204,373.25. The capital project costs have been paid for directly and are not presently reflected in the annual operating expense. The estimated tonnage received at the two sanitary landfills was 32,820 tons in 1975, yielding an operating cost, excluding capital, of $6.23 per ton. The operating cost, excluding capital, for the transfer stations and sanitary landfills amounted to $2.50 per person based on the 1970 census population of 81,666 for the County. In 1975, transfer containers were rented from the contract hauler. However, the County plans to purchase containers and anticipates from past experience an operating cost, excluding capital, of about $10 per ton for transferring compacted wastes.

The ongoing program to complete the convenience stations is estimated to cost $450,000. A detailed cost estimate of this program is also included in the appendices. The work of this project is scheduled to be completed by the end of 1976.

Closing Open Dumps. The Refuse Department is responsible for the enforcement of Local Law 4, adopted by Cattaraugus County, July 11, 1973 which in part states that it is illegal

to dump in any area within the County which is not established or licensed by the County Legislature. At the time of establishment of the Refuse Department it was purported that over 330 violators of the Law ranging in size from backyard burn barrels to small roadside dumping areas to open dumps serving entire towns existed in the County. Many violators using the backyard burn barrel upon being provided with accessible and acceptable means of legal disposal and being made aware through public relations efforts discontinued the practice. The environmental movement was much publicized during this time and encouraged the protection of the environment through properly disposing of solid waste. This took care of many of the 330 violators. The dumping areas, all illegal and the majority of them located right along the road, contain everything from individual household waste to abandoned automobiles.

The Refuse Department has established a program whereby it takes upon itself the responsibility of closing the remaining open dumps. Unfortunately, the Department does not have the time or manpower to close all the open dumps over a short period. In the summer of 1974 the dump closing program commenced in the Towns of Mansfield and Ellicottville and has spread from there to other towns closing more than 23 of 41 major dumping locations. The Department has also assisted municipalities in closing municipally operated facilities. The closing, unfortunately, is not always the final answer as in come cases new garbage reappears as soon as the next day.

The initial step in the program is to survey each town, determining the location of all the roadside dumps within its boundaries. The cooperation of the individual town officials must be enlisted to assist in determining ownership and receive assistance to perform the actual covering and cleanup operation.

The next step requires that the owner of the property on which the dump is located be contacted and his permission secured to clean up the dump. This is more often than not a difficult task to first trace and second secure the permission of the skeptical owner. In some instances it is the owner himself who has been dumping in that location for years. Still most landowners are extremely cooperative and appreciative of the free service.

Once access to the site is permitted signs are posted restricting dumping and providing a map giving directions to the nearest disposal facility. The next problem to attack is the extermination of any rat population living off the dump. This is a very necessary step which, if not carried out properly, could lead to the migration of the rat population to areas inhabited by humans. The baiting program uses an anticoagulant causing rats who have injested the bait to bleed internally and die after a few feedings. Domestic animals and humans will normally cough up the anti-coagulant should they get into any,

but the Refuse Department takes care to warn neighboring homeowners of the baiting schedule. The baiting will continue on a regular schedule with periodic visits made to replenish the bait supply for a period of about two weeks. The safest sign of destruction of the rat population is when no more of the bait is being eaten. At that point in time the machinery can move in and clean the area up. This can happen in a number of ways, one of which would be removal of all garbage to the sanitary landfill. The other way would be to compact and cover the refuse providing a cleaned, finished and seeded area. This last step is carried out by the Refuse Department with valuable assistance provided by the individual Town.

Water Monitoring Program. A Water Monitoring Program has been established at the two sanitary landfill sites in conjunction with the New York State Department of Environmental Conservation. The program includes the establishment and periodic testing of monitoring wells constructed on the site and the sampling and testing of existing local wells and natural streams. Background tests were made prior to the opening of the site in order to determine initial conditions as a basis of comparison for future tests.

The purpose of the testing is to determine any change in water quality attributable to the sanitary landfill operation.

The testing shall comply as a minimum with the following testing and frequency schedules:

Water Sampling and Analysis Requirements

Parameter	Frequency
Group I - pH, Alkalinity, Total Solids, Turbidity, Color, Conductivity, Hardness-total, Iron-total, Chlorides	Initially, Quarterly, and as additionally required.
Group II- Ammonia, Nitrate, Nitrite, BOD, COD, Kjeldahl-total, Phosphate-total, Sulfates, Aluminum, Arsenic, Beryllium, Chromium, Copper, Lead, Lithium, Mercury, Potassium, Sodium, Titanium, Detergent, Phenol, Calcium, Silver, Total Coliform	Initially, annually and as additionally required.

Liquid Waste Disposal. The Cattaraugus County Refuse Department provides an economical method for disposal of liquid waste by industry and individuals. The nearest disposal facility for liquid waste is 100 miles (161 km.) from Cattaraugus County and to transport on an individual basis would be prohibitively expensive. The Refuse Department provides an area at the landfill where the industry may store closed containers of industrial waste. Receipt of the containers is documented on arrival and when sufficient containers have accumulated they are transported by truck to the disposal facility. The total cost of transportation and disposal is then divided among the participants on a percent of total volume basis. The cooperative venture is economical for the user and provides the County with a control to insure that liquid wastes are not being disposed of improperly in Cattaraugus County.

Public Relations. The Refuse Department uses every opportunity to gain favorable publicity for the entire program by providing courteous treatment to all those who come to use, visit, or view a facility. By doing this they will not only gain favorable comments regarding this program but will additionally provide the visitor with a more favorable outlook on solid waste disposal in general.

Since the inception of the Refuse Agency, one aim has been to keep the public thoroughly informed at all times. Through the cooperation of the news media throughout Cattaraugus County that goal was attained.

The Refuse Agency initiated a newspaper series on solid waste disposal made available to area newspapers. The series was published and received a wide circulation. Its purpose was to alert the public first to the problems associated with solid waste disposal in Cattaraugus County as they existed when the study period began by detailing the current condition of each disposal facility in the County. Secondly, explaining the laws of the State of New York as they govern the operations of solid waste disposal, to show the public the standards that must be attained on the local level. The third article outlined how the Refuse Agency got its start and provided a detailed chronology of events which took place and studies that were made. The fourth installment of the series detailed the transfer

facilities in the proposed system in an attempt to gain favorable public reaction and the fifth and final article dealt in detail with the proposed Mansfield Landfill Site. The series as a whole proved useful in presenting a picture of the solid waste disposal program under study for the county to the public.

The Refuse Department has continued the practice initiated by its predecessor, the Refuse Agency, and continues to make positive use of the media in order to explain its programs and announce any changes in its operational procedures to the public at large. Notable articles have been written concerning the closing of roadside dumping areas and the search for transfer station sites.

Public Notices are often necessary to notify the public as to changes in operating hours or locations, and observance or non-observance of holidays.

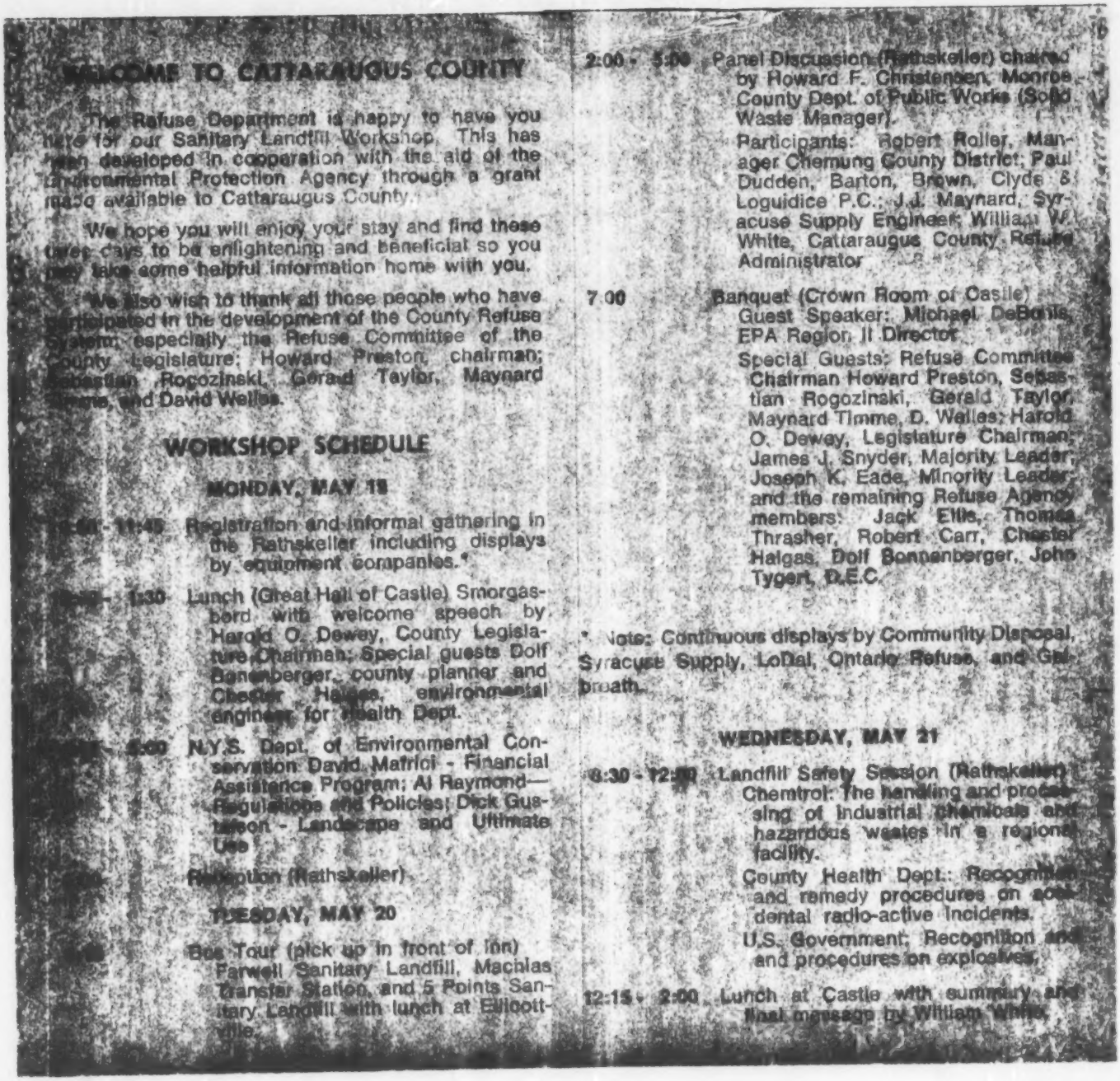
Informational meetings are held to discuss solid waste problems, solutions and ideas in areas where action is anticipated. Prior to moving ahead with locating a facility, such as a convenience station, in an area, it is advisable to meet with the local citizens so that the facility can be explained and any misconceptions resolved. In most instances the Refuse Department trys to provide information to the media prior to a meeting to provide the public with preliminary information to what is to be presented.

The Refuse Department sponsored a booth at the County Fair where free maps of the County, including an explanation of the County Solid Waste Program on the reverse, were distributed. In addition to the map representatives were available to answer questions from citizens.

In May, 1975 the Refuse Department held a three day seminar in Olean which was attended by solid waste officials from both New York and Pennsylvania. Approximately 50 individuals attended the seminar. Presentations at the seminar included various topics concerning solid waste management presented in lecture and panel discussion formats.

FIGURE 10

SANITARY LANDFILL WORKSHOP SCHEDULE



WELCOME TO CATTARAUGUS COUNTY

The Refuse Department is happy to have you here for our Sanitary Landfill Workshop. This has been developed in cooperation with the aid of the Environmental Protection Agency through a grant made available to Cattaraugus County.

We hope you will enjoy your stay and find these three days to be enlightening and beneficial so you may take some helpful information home with you.

We also wish to thank all those people who have participated in the development of the County Refuse System; especially the Refuse Committee of the County Legislature; Howard Preston, chairman; Sebastian Rogozinski, Gerald Taylor, Maynard Timme, and David Welles.

WORKSHOP SCHEDULE

MONDAY, MAY 18

11:45 - Registration and informal gathering in the Rathskeller including displays by equipment companies.*

1:30 - Lunch (Great Hall of Castle) Smorgasbord with welcome speech by Harold O. Dewey, County Legislature Chairman; Special guests Dolf Bonenberger, county planner and Chester Halgas, environmental engineer for Health Dept.

5:00 - N.Y.S. Dept. of Environmental Conservation David Matrici - Financial Assistance Program; Al Raymond—Regulations and Policies; Dick Gustafson - Landscape and Ultimate Use

Reception (Rathskeller)

TUESDAY, MAY 20

Bus Tour (pick up in front of Inn) Farwell Sanitary Landfill, Machias Transfer Station, and 5 Points Sanitary Landfill with lunch at Ellicottville.

2:00 - 5:00 Panel Discussion (Rathskeller) chaired by Howard F. Christensen, Monroe County Dept. of Public Works (Solid Waste Manager).

Participants: Robert Roller, Manager Chemung County District; Paul Dudden, Barton, Brown, Clyde & Loguidice P.C.; J.J. Maynard, Syracuse Supply Engineer; William W. White, Cattaraugus County Refuse Administrator

7:00 Banquet (Crown Room of Castle) Guest Speaker: Michael DeBasils, EPA Region II Director

Special Guests: Refuse Committee Chairman Howard Preston, Sebastian Rogozinski, Gerald Taylor, Maynard Timme, D. Welles; Harold O. Dewey, Legislature Chairman; James J. Snyder, Majority Leader; Joseph K. Eade, Minority Leader; and the remaining Refuse Agency members: Jack Ellis, Thomas Thrasher, Robert Carr, Chester Halgas, Dolf Bonnenberger, John Tygert, D.E.C.

* Note: Continuous displays by Community Disposal, Syracuse Supply, LoDal, Ontario Refuse, and Gilbreath.

WEDNESDAY, MAY 21

8:30 - 12:00 Landfill Safety Session (Rathskeller)

Chemtrol: The handling and processing of industrial chemicals and hazardous wastes in a regional facility.

County Health Dept.: Recognition and remedy procedures on accidental radio-active incidents.

U.S. Government: Recognition and and procedures on explosives.

12:15 - 2:00 Lunch at Castle with summary and final message by William White.

Bibliography

Cattaraugus County Refuse Agency. An Interim Report to the Cattaraugus County Legislature on County Wide Refuse Collection and/or Disposal. June 9, 1971. 31 p.

Hazen and Sawyer, Engineers. Report on Refuse Collection and Disposal, Cattaraugus County, New York. Prepared for Cattaraugus County Planning Board and Cattaraugus County Refuse Agency, December, 1969.

Wendell Associates. Farwell Sanitary Landfill Operation Plan. Prepared for the Cattaraugus County Refuse Department, January, 1974. (Project No. 1536-1-40-74.)

Wendell Associates. Operational Report: Cattaraugus County, New York Refuse Disposal Program. Prepared for the Cattaraugus County Refuse Agency, April, 1973. (Project No. 1536-1-40-73.)

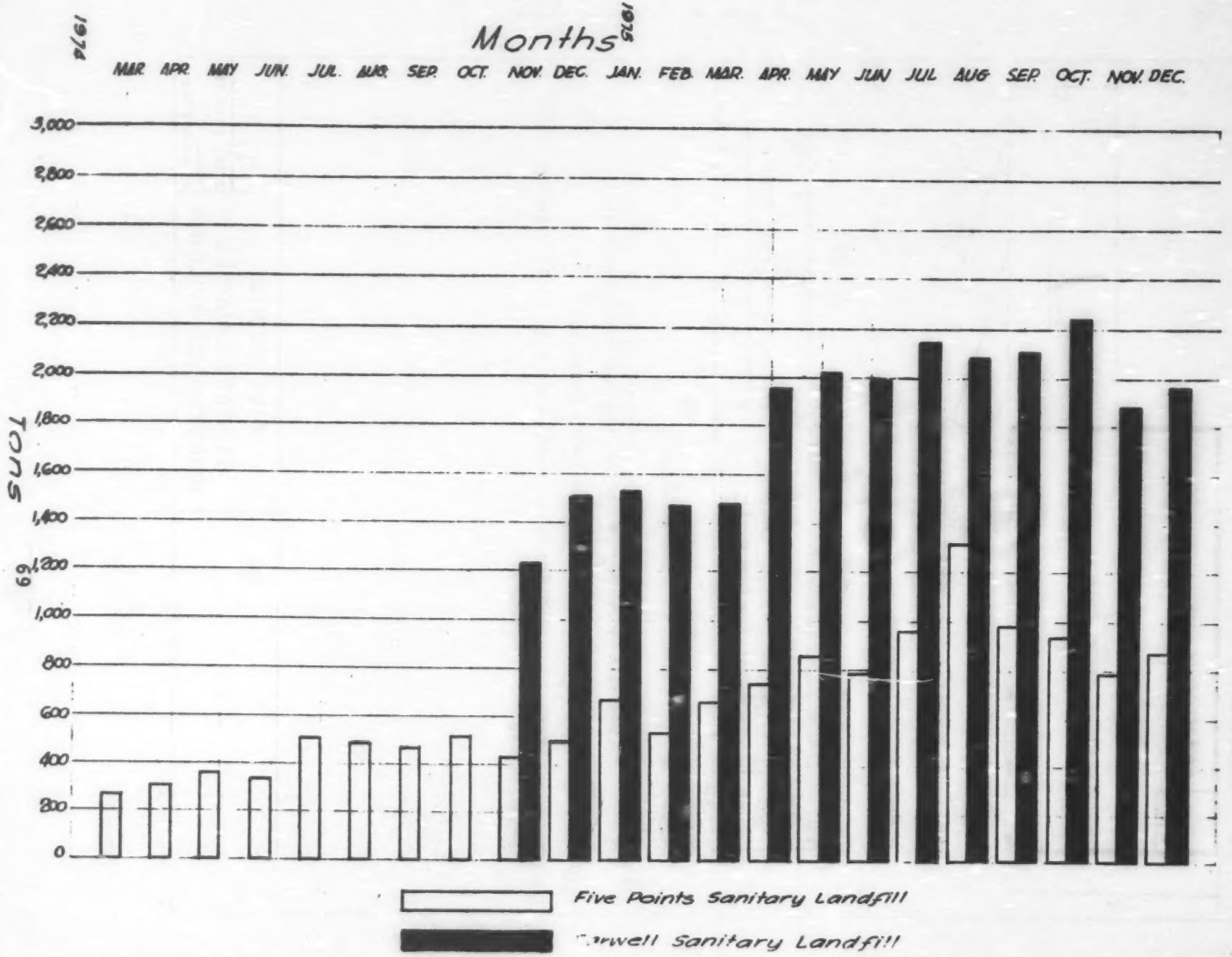
White, W.W., Interim Report for Model Sanitary Landfill, Cattaraugus County, New York [S-801774]. Environmental Protection Agency, May, 1974. 9 p.

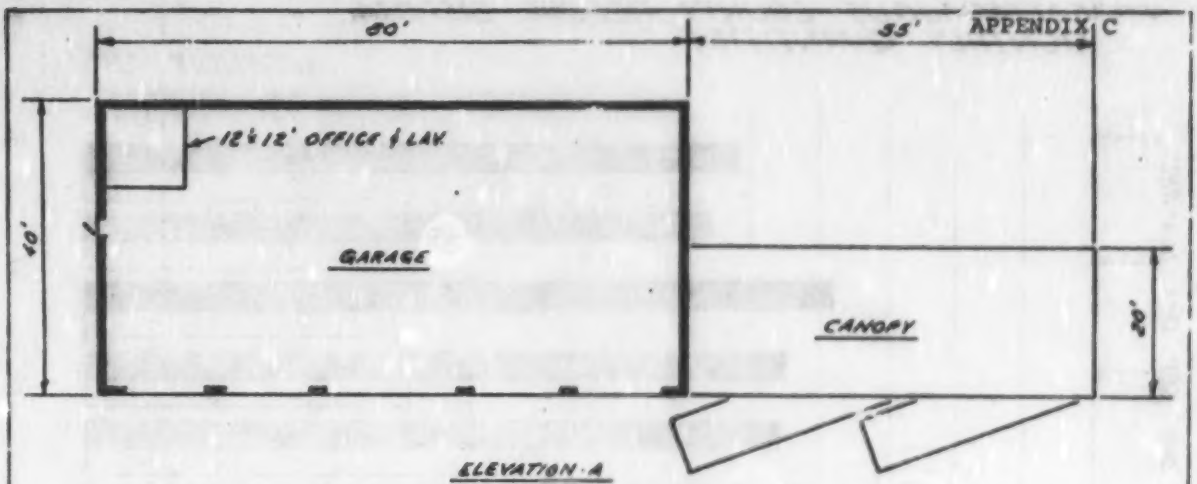
APPENDICES

STATE OF NEW YORK
CANADA
ST. LAWRENCE
FRANKLIN
CLINTON
ESSEX
JEFFERSON
LEWIS
LAKE ONTARIO
HAMILTON
WARREN
VERMONT
WASHINGTON
SENECA
OSWEGO
ONEIDA
NIAGARA
ORLEANS
MONROE
WAYNE
SARATOGA
FULTON
GENESEE
ONONDAGA
HERKIMER
SCHENECTADY
ONTARIO
MONTGOMERY
LAKE ERIE
WYOMING
MADISON
RENSSELAER
ERIE
LIVINGSTON
YATES
CAYUGA
OTSEGO
CORTLAND
CHENANGO
ALBANY
SCHOHARIE
CHAUTAUQUA
ALLEGANY
STEUBEN
SCHUYLER
TOMPKINS
GREENE
CHEMUNG
TIOGA
BROOME
DELAWARE
COLUMBIA
MASS.
PENNSYLVANIA
ULSTER
DUTCHESS
SULLIVAN
CONN.
ORANGE
PUTNAM
WEST-
CHESTER
NEW JERSEY
ROCK-
LAND
LONG ISLAND SOUND
BRONX
NEW YORK
SUFFOLK
QUEENS
KINGS
NASSAU
ATLANTIC OCEAN
RICHMOND

CATTARAUGUS COUNTY REFUSE DISPOSAL
MONTHLY QUANTITIES

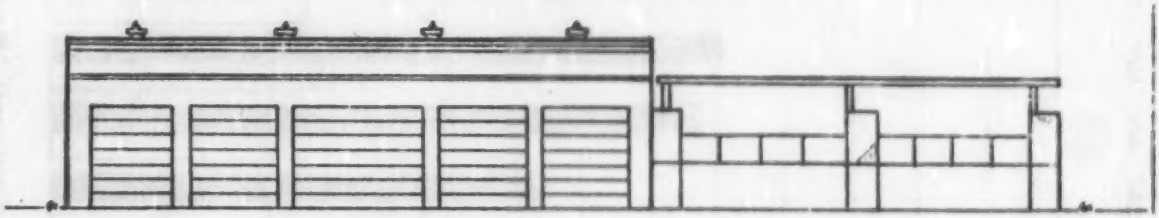
APPENDIX "B"





ELEVATION-A

Floor Plan



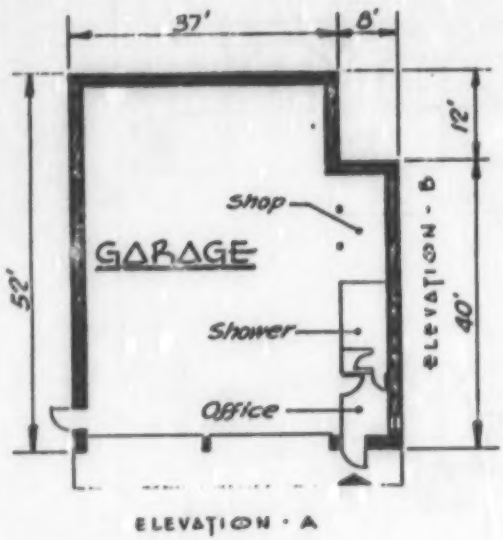
Elevation-A

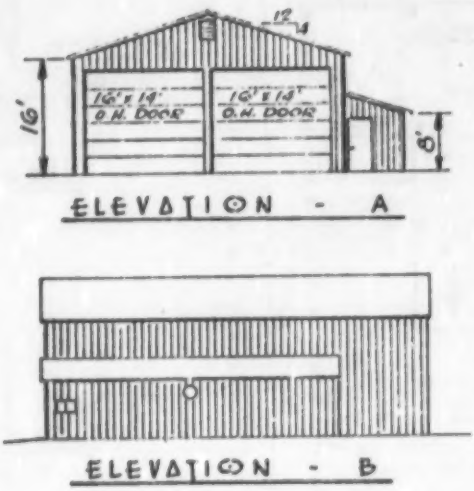
GENERAL: Heated five bay garage with office and toilet facility. Attached is canopy protected individual disposal area.

SIZE: Rectangular 40' x 80' one story building.

CONSTRUCTION: Exterior insulated metal panel wall with steel framing, concrete floor.

	FIVE POINTS SANITARY LANDFILL MAINTENANCE BUILDING	SHEET NO.
		DATE: 8-14-76
		SCALE: NTS
		FILE NO.: 272.2





GENERAL: Heated two bay garage with an extension for repair shop, office, toilet and shower facility.

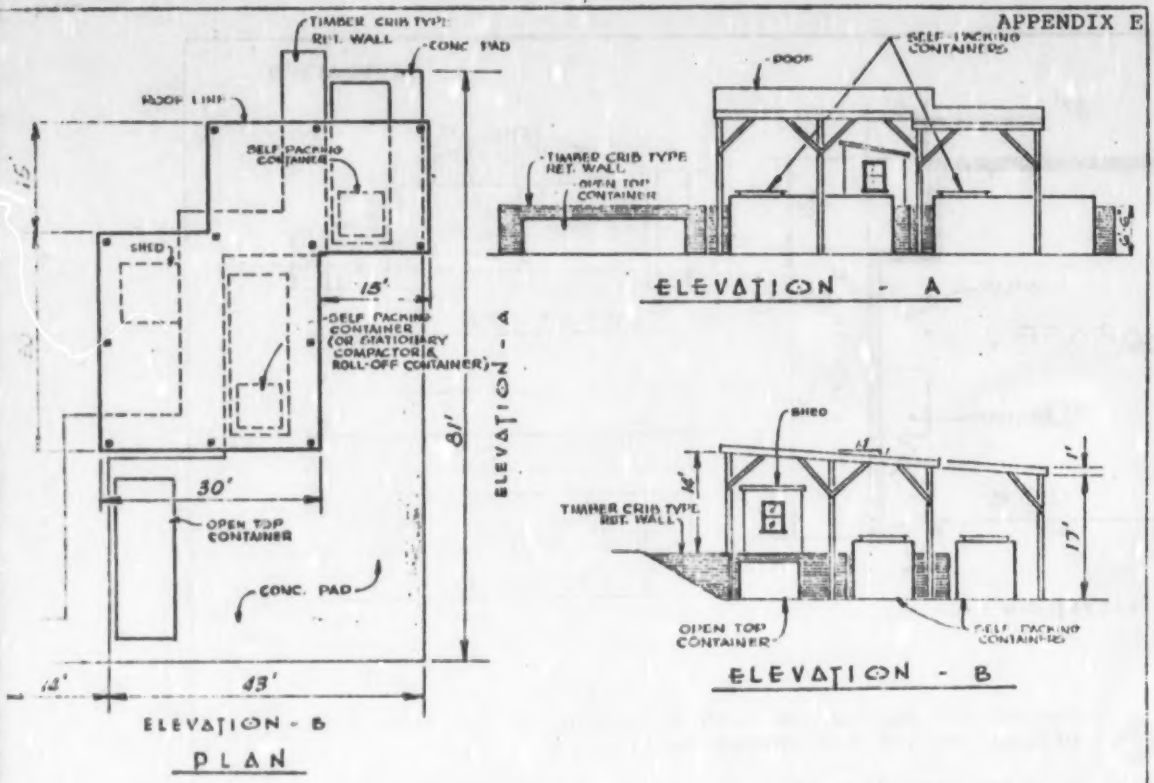
SIZE: Rectangular 37' x 52' with 8' x 40' extension - one story building. Total floor area 2244 sq. ft.

CONSTRUCTION: MAIN BUILDING: Exterior insulated metal panel wall with wood post, beam framing; wood trusses and purlins with metal roof; styrofoam board ceiling over entire area; concrete floor on grade; two fiberglass manually operated overhead doors with one passenger door; concrete apron.

EXTENSION: Exterior wood stud wall with metal panel; interior wood stud wall with gypsum board; wood rafters and purlins with metal roof; gypsum board ceiling, concrete floor on grade; three passenger doors.

MECHANICAL: Oil fired hot air furnace; flourescent light fixtures.

	FARWELL SANITARY LANDFILL MAINTENANCE BUILDING	SHEET NO. DATE: 2-1-76 SCALE: N.T.S. FILE NO. 272.2



General: Open sided structure with integral timber crib retaining wall, capable of accommodating three roll-off container units. Unit arrangements are comprised of various combinations of stationary compactor-roll-off container unit, self-packing container and/or open top container.

Size: Shed housing power equipment is portable wood structure, 8' x 12'. The retaining wall is constructed of connected 7' square timber cribs. The independent roof structure covers approximately 1350 square feet.

Construction: Wood rafters and purlins with plywood deck supported on wood beams and posts. Timber crib retaining wall with concrete pad at lower level over compacted gravel subbase.

	TIMBER TRANSFER SHELTER Type III	SHEET NO.
		DATE:
		SCALE:
		FILE NO:

CATTARAUGUS COUNTY REFUSE DEPARTMENT

CAPITAL EXPENDITURES REPORT SUMMARY

I.	FIVE POINTS LANDFILL		
	A. Equipment	$177,636.29	
	B. Tools & Supplies	2,450.53	
	C. Building Contracts	221,283.77	
	D. Site Work Construction	86,598.11	
			$487,968.70
II.	FARWELL LANDFILL		
	A. Land Costs	$120,024.06	
	B. Equipment	158,196.86	
	C. Site Work & Construction	183,023.82	
	D. Tools	95.36	
			$461,340.10
III.	ENGINEERING		$119,420.40
IV.	TRAVEL		$ 4,254.37
V.	SUPPLIES		$ 7,275.21
VI.	CONVENIENCE STATIONS		$ 86,517.70
VII.	CONVENIENCE STATION SITE DEVELOPEMNT-		$ 31,180.55
VIII.	MISCELLANEOUS		$ 2,634.82
	TOTAL CAPITAL EXPENDITURES		$1,200,591.85

CATTARAUGUS COUNTY REFUSE DEPARTMENT

CAPITAL EXPENDITURES REPORT

I. Five Points Landfill

A. Equipment

1.	D7F Bulldozer	$ 66,941.12	
2.	941B Track Loader	30,957.00	
3.	1969 4-wheel drive pickup	1,600.00	
4.	International Dump Truck	7,202.88	
5.	Forage Box	3,709.00	
6.	Hydraulic Pan	39,446.00	
7.	Ford Tractor	7,351.49	
8.	Welder	1,007.20	
9.	Toledo Scales	14,298.00	
10.	Air Compressor	933.00	
11.	Pump	819.50	
12.	Power Washer	375.00	
13.	Office Furniture	625.92	
14.	1,000 gallon fuel tank	495.85	
15.	Miscellaneous	1,874.33	
			$177,636.29

B. Tools and Supplies $ 2,450.53

C. Building Contracts

1.	Bradley Builders General Construction	$115,244.75	
2.	Dan White Electric Electric	10,363.02	
3.	Terra Marine Dredging		
	a. Site Work	45,701.00	
	b. Building & Plumbing	34,022.00	
	c. Heating & Ventilating	15,953.00	
			$221,283.77

D. Site Work Construction

1.	Site Development	$ 13,751.61	
2.	Gas Line Connection	2,445.00	
3.	Road Construction	20,117.54	
4.	Equipment Rental	30,758.58	
5.	Gas Venting System	864.22	
6.	Groundwater Monitoring System	1,110.73	
7.	Fencing	432.15	
8.	Landscaping	723.79	
9.	Traffic Control Devices	142.69	
10.	Miscellaneous	12,269.80	
			$ 86,598.11

Five Points Landfill Capital Expenditure Total $487,968.70

II. Farwell Landfill

A. Land Costs

1.	Option	$ 300.00	
2.	Test Pits	246.50	
3.	Test Borings	2,839.50	
4.	Property Survey	1,700.00	
5.	Land Purchase	114,938.06	
			$120,024.06

B. Equipment

1.	D7F Bulldozer (less Winch)	$ 60,383.00	
2.	3/4 ton 4-wheel drive pickup	1,490.00	
3.	941 B track loader	37,465.00	
4.	Ford Tractor	6,584.79	
	a. accessories kit	359.64	
5.	Truck Body	1,261.43	
6.	Dump Truck w/plow	7,300.00	
7.	1,000 gallon tank and installation	463.00	
8.	Forage Box	3,069.00	
9.	Hydraulic Pan	39,446.00	
10.	Power Washer	375.00	
			$158,196.86

C. Site Work and Construction

1.	Individual Convenience Area	$ 3,233.47	
2.	Site Investigation & Survey Layout	1,053.77	
3.	Road Construction	7,366.57	
4.	Equipment Rental	108,058.45	
5.	Fencing	1,165.19	
6.	Signs	216.05	
7.	Structures	2,136.70	
8.	1,000 gallon tank w/installation	463.00	
9.	Groundwater Monitoring System	3,525.75	
10.	Maintenance Building	54,678.00	
11.	Miscellaneous	1,126.87	
			$183,023.82

D. Tools $95.36

Farwell Landfill Capital Expenditure Total $461,340.10

III. Engineering

A. Wendel Associates

1. Data Collection and Assimilation	$ 3,000.00	
2. Long Range Development Plan	19.930.00	
3. Final Design	14,867.00	
4. Construction Observation	24,590.39	
5. Additional Services	10,636.00	
		$ 73,023.39

B. Barton Brown Clyde & Loguidice, P.C.

1. Final Report	$ 9,000.00	
2. Farwell Building Design and Transfer System Report	18,055.50	
3. Transfer System Design	19,341.51	
		$ 46,397.01

Engineering Capital Expenditure Total $119,420.40

IV. Travel Expenses

A. Administration	$ 442.12	
B. Public Relations Coordinator	3,553.42	
C. Dump Closings	258.83	
Travel Expenses Capital Expenditure Total		$ 4,254.37

V. Supplies

A. Administrative		$ 3,268.22
B. Public Relations		
1. Telephone	$ 201.43	
2. Film & Processing	179.91	
3. County Fair Booth - 1973	119.85	
4. County Fair Booth - 1974	87.99	
5. Dump Closings	3,417.81	
		$ 4,006.99
Supplies Capital Expenditure Total		$ 7,275.21

Convenience Stations

A.	Site Investigation		$ 1,971.87
B.	Equipment Purchase		
1.	2-tractors	$ 13,169.58	
2.	5-hydraulic cylinders	13,776.25	
3.	8-open containers	31,200.00	
4.	4-closed ejection containers	24,400.00	
			$ 82,545.83
	Convenience Stations Capital Expenditure Total		$ 84,517.70

Convenience Station Site Development

A.	Allegany Site		
1.	Step Platforms	$ 146.63	
2.	Gravel	9.46	
			$ 156.09
B.	Conewargo Site		
1.	Cover test pits	$ 42.00	
2.	Survey & Elevations	375.00	
3.	Land purchase	4,999.00	
			$ 5,416.00
C.	Dayton Site		
1.	Test Holes	$ 47.87	
2.	Land Purchase	9,600.00	
3.	Equipment Rental	1,579.50	
			$ 11,227.37
D.	Machias Site		
1.	Preliminary Investigation	$ 142.86	
2.	Land Purchase	4,500.00	
3.	Structure	1,588.02	
4.	Site Work	6,869.30	
5.	Signs	76.00	
			$ 13,176.18

E. Portville Site			
1. Labor and Equipment Rental	$ 563.28		
2. Step Platform	146.63		
3. Gravel	495.00		
			$ 1,204.91
Convenience Station Site Development Capital Expenditure Total			$ 31,180.55
VIII. Miscellaneous			
A. Treasurer Time Charges			$ 222.69
B. Professional Services, Bonding			1,000.00
C. Security Col.			618.60
D. Brochures			781.20
E. Workshop Seminar			12.33
Miscellaneous Capital Expenditure Total			$ 2,634.82

CATTARAUGUS COUNTY REFUSE DEPARTMENT
1975 ANNUAL REPORT
OPERATING EXPENSES
SUMMARY

I.	Administration	$ 32,326.51
II.	Five Points Landfill	52,009.17
III.	Farwell Landfill	58,977.01
IV.	Convenience System	61,060.56
TOTAL 1975 OPERATING EXPENDITURES		$204,373.25

CATTARAUGUS COUNTY REFUSE DEPARTMENT
1975 ANNUAL REPORT
OPERATING EXPENSES

1.	ADMINISTRATION		
	A. PERSONNEL (Administrator, Coordinator, Accounting & Secretarial)		$27,141.00
	B. MAINTENANCE OF EQUIPMENT		
	1. Administrator's Vehicle		2,000.00
	C. OFFICE EXPENSES		
	1. Postage	110.03	
	2. Supplies	432.82	
	3. Service Agreements	121.51	
	4. Telephone	1,310.22	
			1,974.58
	D. TRAVEL		
	1. Individual	911.45	
	2. Summer Housing Survey	299.48	
			1,210.93
	TOTAL OPERATING EXPENDITURES - - - - - - - -		$32,326.51

CATTARAUGUS COUNTY REFUSE DEPARTMENT
1975 ANNUAL REPORT
OPERATING EXPENSES

II.	5 POINTS LANDFILL		
	A. PERSONNEL (Supervisor, 4 Equipment Operators, Laborer)		$38,284.80
	B. GAS & OIL		5,061.77
	C. MAINTENANCE OF EQUIPMENT		
	1. Dozer & Loader	$2,597.87	
	2. Equipment, other	3,854.34	
			6,452.21
	D. UTILITIES		
	1. Telephone	672.82	
	2. Heat	463.24	
	3. Electric	238.67	
			1,374.73
	E. TRAVEL		689.09
	F. CONTINGENCIES		146.57
	TOTAL OPERATING EXPENDITURES - - - - - - - - -		$52,009.17

CATTARAUGUS COUNTY REFUSE DEPARTMENT
1975 ANNUAL REPORT
OPERATING EXPENSES

III.	FARWELL LANDFILL		
	A. PERSONNEL (Supervisor, 4 Equipment Operators, Laborer)		$40,695.60
	B. TOOLS & EQUIPMENT		1,276.28
	C. GAS & OIL		5,139.77
	D. MAINTENANCE OF EQUIPMENT		
	1. Dozer and Loader	$7,442.71	
	2. Equipment, Other	2,143.41	
	3. Equipment Rental	1,730.00	
			11,316.12
	E. TRAVEL		49.48
	F. UTILITIES		
	1. Telephone	379.76	
	2. Heat	120.00	
			499.76
	TOTAL OPERATING EXPENDITURES - - - - - - - - -		$58,977.01

CATTARAUGUS COUNTY REFUSE DEPARTMENT
1975 ANNUAL REPORT
OPERATING EXPENSES

IV.	CONVENIENCE SYSTEM		
	A. Machias		
	1. Personnel	$ 2,364.54	
	2. Electric	291.49	
	3. Telephone	175.93	
	4. Container Rentals	7,200.00	
	5. Hauling	3,835.00	
	6. Mobilization	300.00	
			$14,166.96
	B. Salamanca		
	1. Container Rental	2,280.00	
	2. Hauling	16,980.00	
			19,260.00
	C. Dayton		
	1. Personnel	777.78	
	2. Container Rental	1,157.50	
	3. Hauling	2,515.00	
			4,450.28
	D. Allegany		
	1. Personnel	1,408.68	
	2. Container Rental	1,367.50	
	3. Hauling	8,655.00	
			11,431.18
	E. Portville		
	1. Personnel	1,394.64	
	2. Container Rental	1,567.50	
	3. Hauling	8,790.00	
			11,752.14
	TOTAL OPERATING EXPENDITURES - - - - - - - - -		$61,060.56

Cattaraugus County Refuse Department

1975 Convenience Stations

Location	Container Type	Total Cost	Loads	Total tons	Cost per ton
Machias	Compaction	$14,166.96	77	674	$21.02
Salamanca	Loose	19,260.00	351	1,141	16.88
Portville	Loose	11,752.14	194	630	18.63
Allegany	Loose	11,431.18	179	582	19.64
Dayton	Loose	4,450.28	48	156	28.52

CATTARAUGUS COUNTY CONVENIENCE SYSTEM
CAPITAL COST ESTIMATE

EQUIPMENT

12 Self Packing Ejection Containers @ $12,000		$144,000	
8 Power Units @ $2,500		20,000	
			$164,000

FACILITIES

6 Regular Retaining Wall @ $5,000	=	$ 30,000	
1 2-Slot Retaining Wall @ $3,500	=	3,500	
7 Sheds @ $2,000	=	14,000	
5 Roof Structures @ $2,000	=	10,000	
Construction Labor by County Personnel	=	75,000	
Misc. Fencing (Installed)	=	17,000	
Earthwork Fill Material $6500/site	=	45,500	
Concrete by Co. @ $4,000	=	28,000	
Electrical @ $1,000	=	7,000	
Paving	=	16,000	
			$246,000

ENGINEERING

Design	30,000	
Construction Services	10,000	
		$ 40,000
		$450,000

Act No. 233 By Messrs. Jaquish, Preston, Taylor, Rogozinski & Timme.

LOCAL LAW NUMBER 4-1973
COUNTY OF CATTARAUGUS, NEW YORK

Pursuant to Section 226-b of the County Law and Article 2 of the Municipal Home Rule Law

A LOCAL LAW ESTABLISHING THE CATTARAUGUS COUNTY REFUSE SYSTEM AND RELATING TO REGULATING THE DISPOSAL OF REFUSE IN CATTARAUGUS COUNTY

BE IT ENACTED by the County Legislature of the County of Cattaraugus as follows:

SECTION 1. Statement of Purposes.

The purpose of this local law shall be to protect and promote the health, safety and welfare of the People of Cattaraugus County by regulating the storage, collection and disposal of refuse and by creating a County-wide Refuse Disposal System.

Nothing herein contained shall be construed to abridge the emergency powers of the Board of Health of the Department of Health or the right of the Department of Health to engage in any of its necessary or proper activities.

SECTION 2. Definitions.

(a) Refuse shall mean useless, unwanted or discarded materials, solid in nature or semi-solid with insufficient liquid content to be free flowing, including but not limited to garbage, rubbish, ashes, bulky waste, dead animals, construction and demolition debris, solid yard trimmings, trees, tree trimmings, industrial waste and sewage treatment wastes.

(b) Garbage shall mean the putrescible portion of domestic, industrial or commercial refuse.

(c) Rubbish shall mean the non-putrescible portion of domestic and commercial refuse consisting of but not limited to paper, cardboard, cartons, wood, excelsior, plastics, rags, cloth, rubber, metal, cans, bottles, ceramics, leaves, grass and yard trimmings.

(d) Bulky waste shall mean the non-putrescible portion of refuse including but not limited to stoves, refrigerators, other large appliances, bath tubs, sinks, furniture, large auto parts and tires.

(e) Construction and demolition debris shall mean lumber, roofing, rubble, broken concrete, plaster, conduit pipe, fire insulation, etc.

(f) Industrial waste shall mean refuse resulting from industrial processes and manufacturing operations.

(g) Sewage treatment waste shall mean the course screenings, grit and de-watered sludge from a sewage treatment plant or septic tank sludge.

(h) Person shall mean any individual, group of individuals, partnership, firm, corporation, association, state, county, city, town, village or improvement district.

(i) Refuse disposal area shall mean an area upon which refuse is deposited.

(j) Collector shall mean any person engaged in collecting refuse for hire or as part of usual industrial operation.

(k) The Commissioner shall mean the Cattaraugus County Commissioner of Health.

(l) An unsatisfactory refuse disposal area shall mean a refuse disposal area which does not conform with the rules and regulations set forth in Part 19 of the New York State Sanitary Code, the Environmental Conservation rules and regulations, or the applicable provisions of the Cattaraugus County Refuse Local Law.

(m) Open burning shall mean any outdoor fire or outdoor smoke producing process, excepting those fires for recreational purposes such as barbecue fires, high school bonfires, boy scout campfires, etc., and agricultural and dairying burning of fields.

(n) County shall mean the County of Cattaraugus.

(o) Committee shall mean the Refuse Committee of the Legislature.

(p) Department shall mean the Cattaraugus County Refuse Department.

(q) Legislature shall mean the Cattaraugus County Legislature.

SECTION 3. Creation of Refuse Disposal System.

There is hereby created and established, pursuant to Section 226-b of the County Law of 1970, the Cattaraugus County Refuse Disposal System. Said system shall be administered and operated by the Department.

SECTION 4. Refuse Disposal Areas.

The various sanitary landfills and transfer stations presently owned by the County of Cattaraugus, together with such

other refuse disposal sites as may, either prior to or following the enactment of this local law, be established by the Legislature or licensed by the Committee, are hereby designated as the refuse disposal sites to be used by all persons within the County. The sites established or licensed pursuant hereto shall be for the exclusive use of the residents of the County. Any person who shall transport refuse from outside the County and dump or discharge the same upon any of the aforementioned sites shall be subject to the penalties imposed for the violation of this local law.

SECTION 5. Powers of the Committee.

The Committee shall subject to the approval of the Legislature:

(a) Formulate, adopt, promulgate, amend and repeal rules and regulations, in furtherance of this local law, for controlling the storage, collection and disposal of refuse in the County of Cattaraugus.

(b) Control the storage, collection and disposal of refuse in accordance with the provisions of this local law and of the rules and regulations promulgated pursuant thereto.

(c) Hold hearings, subpoena and compel the attendance of witnesses and the production for examination of any book, paper or item relating to the matter under investigation. For this purpose the Committee may designate one of its members to hold hearings and issue subpoenas.

(d) Make findings of fact and determinations.

(e) Make, modify or cancel orders affecting the control of the storage, collection or the disposal of refuse.

(f) Request the County Attorney to institute civil actions, proceedings or hearings to compel compliance with the orders of the Committee and with the provisions of this local law and the rules and regulations promulgated pursuant thereto.

(g) Prepare and issue criminal informations or otherwise institute criminal proceedings against persons found to be in violation of the provisions of this local law.

(h) Fix fees for licenses and renewals thereof.

(i) Issue licenses and renewals thereof; cancel, suspend and revoke licenses after a hearing.

(j) Take such other action as it may deem necessary, proper or desirable to enforce the provisions of this local law or any of the rules and regulations promulgated pursuant thereto.

(k) Delegate its power to issue licenses to the Cattaraugus County Refuse Administrator.

SECTION 6. Hearings.

All hearings held pursuant hereto shall be upon not less than ten days notice to the person involved and shall be held at a time and location specified by the Committee.

SECTION 7. Dumping of Refuse.

It shall be unlawful for any person to dump, throw, deposit, place or cause to be thrown, dumped, deposited or placed or allow to be thrown, dumped,deposited or placed at any location

within Cattaraugus County any refuse or any nauseous or offensive material, except upon those refuse disposal areas established by the Legislature or licensed by the Committee.

SECTION 8. Refuse Disposal Area Operation.

(a) No person shall operate a refuse disposal area after the first day of January 1974 until an application has been filed with the Committee and a license has been issued by the Committee in accordance with this local law and with the rules and regulations promulgated thereunder. Before issuing such a license the Committee may require such plans, reports, specifications and other data as is necessary for it to determine whether the site is suitable for such operation and the proposed method of operation is feasible.

(b) Application for a License to Operate a Refuse Disposal Area.

Any person who desires to operate or maintain a refuse disposal area shall make application to the Committee on application forms provided by the Committee. The fee for each license shall be $100.00 and shall accompany the application to operate a refuse disposal area. If the application is denied, such sum shall be refunded to the applicant.

(c) Operation and Maintenance.

Any person who operates or maintains a refuse disposal area or permits the use of his land as a refuse disposal area shall cause the operator to maintain and operate such area in compliance with the following requirements:

1. Burning of refuse at the refuse disposal area is prohibited.

2. No refuse shall be deposited in such a manner that refuse or leaching from it shall cause or contribute to a condition in contravention of standards adopted pursuant to Section 17 of the Environmental Conservation Law.
3. Dumping of refuse shall be confined to an area which can be effectively maintained and operated in accordance with these regulations. This shall be controlled by supervision, fencing, signs, etc. An operator must be present on the site during all hours of operation. Rules and regulations governing dumping at the refuse disposal area shall be conspicuously posted.
4. All refuse at the refuse disposal area shall be compacted and covered daily with a compacted layer of at least 6 inches of suitable cover material, and a final compacted layer of at least 2 feet of suitable cover material shall be placed within one week after the final deposit of refuse is made, unless an exemption in writing is granted by the Agency.
5. Effective means shall be taken to control flies, rodents and other insects or vermin at the refuse disposal area to the extent that they shall not constitute a nuisance.
6. Fencing or other suitable means shall be used to confine papers and other refuse to the refuse disposal area. Scattered papers on the site shall be picked up and disposed of daily.
7. The salvaging of refuse shall be conducted in a manner as not to create a nuisance.

8. Approach road and on-site roads used by the general public at refuse disposal areas shall be maintained and kept passable during all seasons.

SECTION 9. The Closure of Unsatisfactory Refuse Disposal Areas.

If any person operates or maintains a refuse disposal area or allows the operation or maintenance of a refuse disposal area on his property which, after a hearing, is deemed unsatisfactory by the Committee, the Committee may order that such refuse disposal area be closed and abandoned. The Committee shall reserve the right to order the operator of the refuse disposal area or the property owner to bear the cost of such closure or of the closing or the upgrading of the refuse disposal area. The closure of all unsatisfactory refuse disposal areas shall be done in accordance with specifications developed by the Cattaraugus County Refuse Administrator for the closure of refuse disposal areas.

SECTION 10. Collection of Refuse.

(a) Any person, except for an individual who collects refuse generated by himself or his immediate family, who collects garbage, rubbish, dead animals, sewage treatment wastes or putrescible industrial wastes after January 1, 1974, must possess a valid license issued by the Committee.

(b) Any person who wishes to collect garbage, rubbish, dead animals, sewage treatment wastes or putrescible industrial wastes must make application to the Committee for a license on

application forms to be provided by the Committee. A fee of $25.00 shall accompany the application for a license to collect refuse.

(c) If after a hearing the Committee deems that the collector operates in a manner not in compliance with the provisions hereof or in a manner such as to cause a nuisance or hazard to the public, the Committee may suspend or revoke the collector's license.

(d) The collector must operate in compliance with the following requirements:

1. The owners and operators of all vehicles used for the collection of garbage, rubbish, dead animals, sewage treatment wastes and putrescible industrial wastes shall:
   (a) Ensure that there is no spillage of liquid from the vehicle.
   (b) Ensure that there is no spillage or blowing of solids from the vehicle.
   (c) Maintain the vehicle and keep it clean.
   (d) Affix the name of the owner or business on both sides of the vehicle in letters not less than four inches high and of a color contrasting with the background.
   (e) Ensure that the vehicle is capable of discharging contents from a stationary position.

2. All vehicles used for the collection of garbage, rubbish, dead animals, sewage treatment wastes and putrescible industrial wastes shall be stored in a manner as not to create a nuisance.

3. Collectors shall handle refuse containers in a manner so that no refuse is spilled during the transfer from the container to the collection vehicle and so that the container is not damaged during such handling or as a result of such handling. Damage to containers not meeting the specifications set forth herein shall not be covered by this section.

4. The collector shall dispose of the refuse:

   (a) After January 1, 1974, only at a refuse disposal area established by the Legislature or operating under a license issued by the Committee.

   (b) In accordance with the rules and regulations posted at the said refuse disposal area.

SECTION 11. Containers:

1. Storage of all garbage, dead animals, sewage treatment wastes and putrescible industrial wastes shall be in containers which completely confine the material.

2. The structure of the containers to confine the aforementioned refuse shall be such that they:

   (a) Prevent the exit and entrance of insects, rodents or other animals.

   (b) Can be easily cleaned.

(c) Will not crack when subject to cold temperatures.

(d) Will not break or burst when lifted.

(e) Are easily unloaded.

(f) Shall be of sufficient integrity to confine such wastes for a time determined by the Committee.

3. All containers shall be kept in a clean and sanitary condition.

SECTION 12. Open Burning.

Open burning shall be prohibited in all incorporated villages and cities in Cattaraugus County, unless a license for such burning is issued by the Committee and is also approved by the New York State Department of Environmental Conservation.

SECTION 13. Suspension or Revocation of License.

1. The Committee may suspend or revoke a license for violation of the provisions of this local law or of the rules and regulations promulgated hereunder.

2. Suspension or revocation of a license shall become final five days after service of a notice thereof upon the holder of a license.

3. The holder of the license or other aggrieved party affected by such suspension or revocation may request a hearing by the total membership of the Committee to reconsider its action by serving upon any member of the Committee designated for that purpose a request for reconsideration within five days following

the service of the notice of suspension or revocation, which shall set forth the reasons for such request.

4. Unless the Committee orders that the license be suspended or revoked during the pendency of the reconsideration, such suspension or revocation shall be stayed by effective service of such notice of reconsideration until final determination by the Committee.

SECTION 14. Surrender of Licenses.

A license which has been revoked or suspended shall be surrendered forthwith to the Committee.

SECTION 15. Service of Notice, Order or Decision.

1. Service of any notice, order or decision shall be made as follows:

(a) By mailing a copy of such notice, order or decision in a postpaid envelope directed to the person affected thereby at his residence or business address, or

(b) By leaving a copy of such notice, order or decision with said person or his agent.

2. Service of any notice shall be made upon the Cattaraugus County Administrator, Committee or Department by mailing the notice in a postpaid envelope directed to the Administrator, Committee or Department.

SECTION 16. Exclusionary Clause.

1. The provisions of this local law relating to the regulation and licensing of refuse disposal areas shall apply only to the areas of the County of Cattaraugus outside any city,

village or town during such time as such city, village or town is regulating or licensing refuse disposal areas, as provided in Section 10 of the municipal Home Rule Law.

2. The provisions of this local law relating to the regulating and licensing of refuse collectors shall apply only to the areas of the County of Cattaraugus outside any city, village or town during such time as such city, village or town is regulating or licensing refuse collectors, as provided in Section 10 of the Municipal Home Rule Law.

SECTION 17. Penalties.

1. Any person who shall violate, or fails to perform any duty imposed by (a) the provisions of this local law, or (b) the rules and regulations promulgated thereunder, or (c) any order made or decision rendered by the Committee, pursuant to this local law or the rules and regulations promulgated thereunder, shall be guilty of an offense, and upon conviction thereof shall be punished by a fine not to exceed one hundred fifty ($150.00) dollars or by imprisonment for not more than thirty (30) days, or by both such fine and imprisonment. Each day of violation shall constitute a separate offense.

2. The provisions of subsection (1) hereof shall not be construed to exempt such person from any other action, prosecution or penalty provided by this local law or by any other applicable law or ordinance.

SECTION 18. Separability.

If any provision of this local law or the application thereof to any person or circumstance shall be held invalid, the remainder of such local law or the application of such provision to any other person or circumstance shall not be affected thereby.

SECTION 19. Effective Date.

This local law shall take effect on November 30, 1973.

Act No. 233

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